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Original Contributions.

CAUSES FOR THE FAILURE OF AMALGAM FILLINGS.

By E. K. Wedelstaedt, D.D.S., St. Paul, Minn. Read Before the Iowa State Dental Society, at Dubuque, May 1-3, 1900.

Some of the reasons why amalgam fillings fail are:—1. Placing the amalgam on a mass of decay. 2nd. Improper cavity preparation. This is subdivided into—a. Non-extension for prevention. b. Non-removal of overhanging margins of enamel. c. Flaring margins. d. Improper anchorage; too large and too deep undercuts. 3rd. Using alloys of which nothing is known. 4th. Improper mixing and non-condensation of amalgam. 5th. Improper finishing of fillings, and 6th. Stress. There are others, but these are most important.

1st. Placing the amalgam on a mass of decay. This was given first because about 99 per cent of the amalgam fillings which I remove have a mass of soft decay as a foundation. It has been taught for a number of years that this was a good method to follow, as the amalgam caused a "recalcification of the decayed dentin." (Flagg.) Now this teaching is wrong and it is also misleading. When life has passed out of an object it is dead. If this dead object be left in contact with anything that is in a healthy condition, it is but a question of time when that in which there was health is also dead. It can be said with just as much truth, that if a man dies and is buried, and six months later his remains are dug up and the dead mass rolled in carbolic acid for a week, he would again become an animate being. This is not possible, and it is also impossible for any filling material to cause a "recalcification of decayed dentin."

Recently a young woman consulted me regarding the condition of an upper right first molar. On the lingual side was an amalgam filling that occupied about one-fifth of the surface. On the occlusal side was a large amalgam filling which occupied about two-thirds of

the grinding surface. The mesial surface had a small amalgam filling in it and there was a cavity of decay adjoining same. The rubber dam was adjusted, the teeth separated and mesial filling removed. Not being satisfied wiih the appearance of tooth, I removed the amalgam filling in occlusal surface. Under this amalgam was a mass of cement; it was also cut out. The cement had for foundation a large mass of leathery decay. Long before all the decay had been removed the pulp was exposed and it had little vitality. The amalgam filling that had been placed in lingual surface rested against the decay that was under the cement in the occlusal portion of tooth. The patient informed me that the filling on the occlusal was made first; about two years later the filling on the lingual, and about eighteen months ago the mesial had been made. This tooth was rapidly degenerating on account of the poor work done upon it. If the soft decay which was in the occlusal surface had been removed when the tooth was first filled, I do not believe it would have been necessary to make the lingual and mesial fillings. Furthermore, if the mesial cavity had been thoroughly filled without removing the decay from the pulpo-axial wall, that was under the cement in the occlusal portion of the tooth, within two years there would have been a cavity in the distal surface. That tooth would have continued to decay until there was an alteration in its condition. This may seem heresy, but it is the truth. I have followed similar cases and am perfectly aware what the results are. This young woman insisted that every filling in her teeth be removed, as the same man had made them all. It is needless to say that every filling removed had a mass of soft decay for a foundation.

2d. Improper cavity preparation. a. Non-extension for prevention. All proximal cavities that have an adjoining tooth beside them should have the margins so extended that they are in self-cleansing territories. Recurrence of decay takes place where this teaching is not followed. I have absolutely no patience with writers who assert that decay does not readily take place around the margins of amalgam fillings. Here are some filled teeth which may interest you. I do not know the history of these fillings nor anything about them, beyond the fact that their present condition can be charged to non-extension for prevention. I note in the occlusal surface of many teeth round amalgam fillings which are about a millimeter and a half in diameter. Leading from these fillings are

fissures which were not included in the original cavity preparation. Extension for prevention is applicable to the occlusal as well as the proximal surfaces of the teeth.

b. Non-removal of overhanging margins of enamel. Overhanging margins of enamel should in every case be removed unless supported by dentin. If amalgam be crowded under a ledge of enamel the latter will fracture sooner or later. It is poor practice at best.

c. Flaring margins. It is impossible to have anything else than failure where the margins of our cavities flare from the pulpo-axial wall, provided amalgam is the filling material used. The proper angle for a margin can best be illustrated if I take a book and show the angle.

d. Improper anchorage; too large and too deep undercuts. Where amalgam fillings are to be made in the proximal surfaces of a tooth, the place of retention should be at right angles to the cavity proper. This is known as an occlusal anchorage. Broad and deep parallel grooves should under no circumstances be cut in the buccal and lingual margins. The filling should be properly set on as broad and flat a seat as possible. It is not necessary to do more than emphasize these teachings. Large and deep undercuts are a menace to the stability of any filling, for the reason that they can not be filled so perfectly as those which are more shallow. I have yet to see the first filling held in position by large and deep undercuts that has not a dark line in the vicinity of these which indicates that there is a leak. Some time ago I removed an amalgam filling that was leaking badly, from the buccal surface of a lower right first molar. The cavity at the orifice was but two millimeters mesio-distally, but when the filling was finally out the pulpo-axial measurement was five millimeters mesio-distally. There is not a man living who has sufficient skill to make a non-leakable filling in a cavity of that shape.

3d. Using alloys of which nothing is known. Our journals contain advertisements of this and that alloy. We are constantly being visited by traveling men who allege they have "the only and best alloy that there is on the market." Many of us have purchased and used such alloys and too late have found them absolutely worthless. Sufficient attention has not been called to the utter badness of some of these alloys. We must remember that the majority of amalgams undergo a change during crystallization, and it would be well for us to examine a little more carefully the condition of the teeth in which

amalgam fillings have been made in the past and those which we are at present making. By using a four diameter magnifying glass you can ascertain the condition of your margins. In the main you will find a black ditch around about ninety per cent of the fillings which you examine. I am a believer in the use of quick-setting amalgams, for I feel better results are obtained with them than with those that are slow setting, and as the value and worth of the former are disseminated and our knowledge increased regarding them, less and less use will be made of the latter. We can be thankful that there are only a few men left who continue to make and use their own alloys. These few will soon learn that it is far better to buy and use reliable alloys than to use those of which nothing is known.

4th. Improper mixing and non-condensation of amalgam. We should remember that alloys are treacherous things and should never be used where another and a better material can be employed. Dr. Black has given us rules for mixing, condensing and using alloys. If these rules are not followed strictly to the letter, failure takes place. Alloys should be well mixed; not overmixed, but about equal parts of mercury and alloy by weight (some require a trifle more mercury than others.) After weighing the alloy and mercury they should be transferred to a mortar and lightly triturated, then be well kneaded in the hand. If there is an evidence of too much mercury it should be expressed, then reknead the mass and it is ready. The largest possible piece that can be placed in a cavity should be taken first, and the largest sized plugger that will conveniently go into the cavity should be used to pack it. The best results are obtained by heavy condensation. The fewer pieces of amalgam used the better the results and the less the chances for failure of filling.

5th. Improper finishing of fillings. Dr. J. Leon Williams says that recurrence of decay takes place around the margins of fillings because an "opportunity" is left for the microorganisms to again attach themselves. It is therefore not only essential but also most necessary to remove all overhanging margins of filling material, or we leave an "opportunity" for the undoing of our work. The same care should be used in finishing amalgam fillings as in finishing gold ones. They should be so polished that we have practically a mirror finish (Ottolengui), and in giving a filling to this polished surface, it is well to remember that a small and well placed contact is

worthy of some attention. If this care be taken, one of the principal causes for the recurrence of decay around the margins of our fillings will become a thing of the past. Nor is this all—it is much easier to keep a mouth cleanly where the fillings are polished. We invite immunity by making work as nearly perfect as possible.

6th. Stress. Somebody has said that "the amount of stress placed on the majority of proximal fillings is something we know little about, and in a year those fillings have had tons and tons of pressure placed on them." I have seen many fillings that have been strained and moved from their position by the stress of mastication. In fact, a number of my own fillings have been forced from their position by too little attention being paid to occlusion. It is necessary to study the occlusion of the teeth and obtain some adequate idea of the amount of stress a filling will be compelled to withstand. The retention form of our cavity is governed by the amount of wear and tear the filling will be compelled to sustain. If little or no attention is paid to the occlusion of the teeth, more often than we suspect fillings fail by being forced from their position by the stress of mastication. Where slow-setting alloys are used much more care should be given the occlusion, for not infrequently patients bite on the soft amalgam and move it from its position. This movement may be very slight, but it is often more than enough to allow not only the saliva but the food also to enter between the cavity margin and amalgam. This leakage is one cause of the margins around amalgam fillings turning black. So soon as an amalgam filling leaks it should be removed, for it is a menace to the rest of the teeth.

I very greatly deplore some of the past teachings in regard to the use of amalgam. There are many men in our profession who too late in life have learned the utter fallacy of some of the theories advanced. These theories are still extant and there are some who continue to call our attention to their many seeming good qualities. It was only recently that one of our journals contained an essay on "Amalgam," which was written by one who feels he is an authority on this subject, yet I feel it would be doing the cause of dentistry an injustice if attention were not called to one or two statements the essay contains that are not in harmony with the later teachings. This writer says, "In regard to the making of amalgam alloys, I have for twenty years demonstrated that it was a comparatively

easy thing to do, that it needed but little in the way of apparatus and appliances," etc. I am perfectly willing to acknowledge that it is an easy matter to make amalgam alloys, *but what kind?* That question should receive our most serious consideration, for the *kind* is of the greatest importance to us. Any man who has an electric furnace, in which he can melt his metals, and who has apparatus and appliances to test the fillings which he makes from the filings of the ingot, is in a position to make his own alloys. A man so equipped can take ten ounces of metal and should have an ingot that weighs that much as the result of his labor. But if he is not so equipped he has no right to make nor to use his own alloys. If he does make and use them, he is more than likely to do great harm to those who trust him implicitly; he is also doing harm to the profession by using materials about which he knows nothing.

If we desire to progress it is necessary to study the condition of the teeth in which amalgam fillings have been placed. I have called your attention to the conditions as I have found them, and feel certain that many will now make similar examinations and see clearly these black ditches. It is necessary to make these examinations, for it is of vital importance to us and to our patients to have that knowledge which can be obtained only by a careful study of the teeth themselves. Why, if our friends of "New Departure" fame had made such examinations, using as powerful a magnifying glass as could conveniently have been employed to examine the conditions of the margins around their amalgam fillings, we should not have had a "New Departure." They would have discovered the conditions, which you will find when you make these studies. They would also have seen that the ordinary amalgam filling was nothing more nor less than a menace to the integrity of the rest of the teeth, that it invited decay through its change of form, and that no reliance could at any time be placed upon it. These conditions have existed for lo, these many years, and our attention should have been called to them in such a manner that others would have awakened to the realization of what results would come from using such worthless materials.

Now there is another thing in relation to this subject that it is important for us to think about, and that is, the idea that many have regarding the burning out of some tin during the melting process. In fact, quite a number of men have said to me that the

burning out of from two to ten per cent of tin did not do any harm to a given formula. This theory was exploded many years ago. If but one-tenth of one per cent of tin has been burned out from a given formula, we know that an entirely different product results. We also know that the original formula has been disturbed, consequently different results will be obtained with this new product than would have been the case had the tin not been burned out. Apparatus must therefore be at hand to test every new "melt" and definite knowledge should be the maker's before this alloy is used. I believe the manufacturers of our new high-grade alloys are obtaining definite knowledge of what they are selling us and are not placing on the market that of which they know nothing.

Let us go back to this essay on "Amalgam" and consider another statement. It is, that "Failure of fillings is *mainly* due to incompatibility of filling material with tooth-bone." This statement is to be regretted, for it is simply a hypothesis that cannot be explained, and is therefore without scientific worth. We know definitely that failure of fillings is mainly due to one fact—the cause which led to the first decay was not fully removed when the cavity was prepared and filled. An "opportunity" was left for the microorganisms to attach themselves again, with the inevitable result of recurrence of decay. That is the correct and consequently the scientific solution of the whole matter. Let us be thankful that there are only a few left who cling with such great tenacity to the old teachings, the old ideas and to the obsolete methods.

NITRATE OF SILVER FIBRE.

By John G. Harper, D.D.S., St. Louis.

The use of this article has been so satisfactory that every dentist should know how to prepare and apply it. Take long-fibre absorbent cotton, soak it in a saturated solution of nitrate of silver, allow the water to evaporate, repeat the soaking twice, and then when dry the preparation is ready for use.

A few fibres wound around a broach make a convenient form for use underneath the margins of the gums and to carry the medicine into pockets formed by pyorrhea. A small pellet placed in a shallow cavity to arrest decay, especially in deciduous teeth, is an easy mode of application. The pellet is also used wherever a cautery is indicated, as in aphthous patches, sensitiveness from erosion, etc.

Those who believe in filling pulp-canals with cotton will find this fibre an improvement, and the bulbous portion of the pulp-chamber may also be filled with it. Cavities to be filled with amalgam can be rendered immune to future decay by applying nitrate of silver to the walls.

THE PROBLEM WHICH OVERSHADOWS US.

By W. O. Lillibridge, D.D.S., Sioux Falls, S. Dak.

How to elevate the status of the dentist? Legislation and the college, the remedy of the organization, seem to be the hope of both journal and society. With no desire to depreciate, simply with an earnest endeavor to aid, I plead for an agency still more potent, namely, the personal influence of the individual.

A bond of union—one of the strongest and common to all alike—is the facility with which we delegate a duty devolving upon all equally. No matter how zealous or how self-reliant we may be regarding those affairs which pertain to us alone, when the issue involves a class, though we may be of like species, still we remain inactive. Somehow there is a settled conviction that a big labor requires big tools—we forget that often their very size prevents work at the most effective point.

As scholars, as learned men, as citizens who are a power in their own communities, we must in sorrow admit that other professions far outclass us. Is it because we are essentially workers with our hands, and so lose the habit of study, that we fail to grow as do our brothers after graduation? Whatever the cause, the fact is with us. If we would elevate our profession we had best begin at home. Make our own cities recognize us as readers and thinkers, and we will rise in their eyes accordingly. The terms "society man" and "good fellow" are linked to our names entirely too frequently.

The world respects those who respect themselves, and the valuation set by each man upon his own work is apt to be the standard of his fellows. In our fees I think we err more often by deficiency than by exorbitance. The most successful men of my acquaintance, the most respected as well, are they who have established a record for high fees, and, fully as important, have held that record unbroken. It is not the charge itself, but the variation to suit the individual patient which destroys confidence. Of all men the dentist should heed the aphorism, "The laborer is worthy of his hire."

That certain of our competitors advertise should not concern us. So long as the world exists there will be classes, and among these classes will ever be the shoppers, the persons who are looking for a bargain. Such will inevitably gravitate to the advertising man. It is well. I for one decline their patronage. By nature's law like seeks like, and even were the fees equal, the result would not materially differ.

That which makes any man's life endurable is pride in his own work; take away this laudable self-satisfaction and existence is not worth having. Dental art is high art, and high art works for its own sake. Think you one who lives in the product of his hand and brain will remain without honor and without patronage? If so, the profession is unworthy the worker, and there remains but to choose another.

Legislation has done much for us in the past, but its limit is well-nigh reached. The college everywhere exerts its influence to the utmost, but it can not attain its object except through the practitioner. If we would be honored we must first deserve honor. If we desire success we must pay the price of success—that unfaltering devotion to one object which lasts not for a day but through a lifetime. Thus and thus only will the status of the dentist be elevated.

SWAGING METAL BASES.

By G. C. Eickelberg, D.D.S., Waterloo, Iowa. Read Before the Iowa State Dental Society, at Dubuque, May 1–3, 1900.

To swage metal bases for continuous gum, celluloid or rubber attachments, having vacuum chambers, turned rims, grooves or ridges, or to swage a base after the rims have been turned, loops punched or loops soldered to base to hold the celluloid and rubber, or in fact, to swage it after it has been entirely prepared ready to receive the teeth, may not appear to be so easily done as said, but if you will follow instructions I can present a simplified method of producing a correct and perfect fitting base, and at the same time reducing your labors over one-half.

In order that you may be better able to follow out my line of thought I will outline my points as follows: 1st. Obtaining an impression and its preparation for a mould into which a metal may be poured for a die, thus obviating the use of a model and its preparation, or the use of sand or a counterdie, and lastly using a Parker

swager. 2d. Pouring of metal and obtaining a die. 3d. Swaging a base. 4th. Turning a rim and heel on the base. 5th. Swaging a base after it has been entirely prepared ready to receive the teeth. The first essential thing is to obtain a perfect impression in plaster. I use plaster, first, because I think it is the ideal impression material, and second, because you can not obtain a die directly free from the impression when you use wax or modeling compounds that become plastic by heat.

Having obtained an impression, invest it in a flask, allowing the plaster to extend to the upper margin of the impression, being careful not to obliterate nor fill in the imprints or lines made by the frenum and buccinator muscles, and at the same time flow a little of the soft plaster over the posterior palatal surface, or heel of impression about the thickness of a line, up to the mark previously made upon the impression. This mark should extend from condyle to condyle across the heel of impression about $\frac{1}{16}$ of an inch short of the approximate length you desire to have the base extend when finished. The object of doing this is to produce upon your metal die a depressed form into which you may swage the base, so that when finished the heel or posterior edge of the base will press a little firmer upon the palate.

The fourth point is how to prepare the impression invested, so that it will aid you in turning a rim. Before the plaster has thoroughly set, take a small sharp instrument having a convex surface, such as a wax spatula or a No. 1 vulcanite scraper, and cut away the excess plaster around the margin of the impression. This will produce a definite line on your die and a nice concave form into which the metal will swage.

As it is not necessary in all cases to have vacuum chambers, I do not wish to be criticised on this point as to their location, shape, size or condition. We have laws governing them, and each of you may have a law of your own. The object of this paper is to show only that they can be formed and the method in which it is done. Where the case demands an air-chamber, I mark its position and shape, and proceed to carve it directly into the impression; this will produce a raised form upon your metal die and will give a firm and perfect form over which the metal base may be swaged.

All the points I have taken up so far are similar in preparing the impression for a mould for a die over which a metal base may be

swaged for celluloid and rubber attachments, or continuous gum. There remains then but one point to which I wish to call your attention, and this will apply only to the preparation of the impression for metal bases for rubber or celluloid attachments, and I consider it one of the most important points. I mark and cut a groove along the gum line upon the palatal aspect of the impression; this groove should be extended to a point approximating the distance to which you wish the lingual portion of gum to extend, formed of rubber or celluloid, when the case is completed. The object of this is to produce a ridge upon your die, so that when swaging a metal base over it, it will reproduce upon that base a ridge which shall mark the point to which the rubber should extend, and at the same time prevent the edges or margin of the rubber from turning or peeling away from the metal base.

With the impression invested and all these points carried out in detail, place the investment upon a stove and heat gradually until all traces of moisture have disappeared. Into the impression pour a low-fusing metal such as you generally use for metal dies. In this die there will be produced the ridge, correct vacuum chamber, depressed heel, and a concavity along the buccal and labial portion of your die, which will assist in turning a rim on the metal base.

Having obtained a metal die, select the metal you desire to swage and form it over the die. The method I generally pursue is this: Bend the metal into a "U" shape; place it upon the die, fold some moist paper and place it upon the metal you wish to swage, and upon this place a stick or some dry paper folded to suit the case, and by using a hammer weighing about ¾ lb., having a round or ball face, you may hit it quite hard and it will force the metal nearly into position without stretching the metal more at one point than another, and without the scratches, cuts or rough surfaces, such as are produced with a horn mallet or a metal counter-die. After forming the metal to the palatal portion of the die, place the paper back on the metal and with a thumbscrew clasp the die with the metal into position on to your bench. This will prevent the metal from sliding around on the die while bending the outer margin down to conform to your die. After you have bent the outer portion down with a mallet to approximate the shape of your die, place it into a Parker swager and drive it home. You should never lose

sight of the fact that the more you anneal the metal the easier it can be formed to the die.

Having thoroughly swaged the base, place it upon the die and trace with an instrument the lines produced by the ridge and raised surface for the vacuum chamber of your die, until the metal has been thoroughly driven into the corners of the die. To produce a slight undercut to the ridge on the metal base, use an instrument, or it can be cut in with an inverted cone bur.

If you desire to turn a rim on the base, trim the metal so you will have about ⅛ of an inch to turn the rim. After you have swaged so it fits your die perfectly, take smooth, flatnose pliers with thin beaks and turn up about ⅛ of an inch all around the buccal and labial portions of the base. In doing this you need not be extremely careful about not springing the plate, as I will show you later how to correct that.

Having completed the groove, the ridge, the vacuum chamber and the turned rim, we have thus produced a base plate. If you have not sprung the base, you may at this point punch in the loops, roughen the surface or complete it as you wish, and prepare for swaging again. If, however, you have sprung the plate badly by bending the rim, I would advise placing it in the swager and swaging again before completing the base. The vital point to be observed here is this: If you desire to swage a base after the rim has been turned, loops punched or loops soldered to your base, or in fact, swage it after you have entirely completed your attachments, mix some plaster and water to the consistency of cream, to which has been added 2 or 3 grains of potassium sulphate or common salt; fill the groove made by turning the rim, or cup-shaped depressions made by punching the loops, or support the loops soldered to your base, with this plaster and let it dry. Place the base back upon the die; wrap around it a piece of muslin and place it back in your Parker swager and swage. The plaster will protect your attachments and the required results will have been accomplished without injurious effects to the case in hand.

Let me call the attention of those who are interested in porcelain work to a few points that may be of interest. The method of procuring a die directly from the impression is the same as I have already explained to you, except that when I invest the impression I build its posterior or palatal surface with plaster up to such an

extent that when the metal is poured into it for a die its heel will be depressed. The object of this depression on the die is to stretch the metal at that point while swaging the base, so that when you bend the heel of the metal forward you will not draw in the sides of the plate, and you have stretched it sufficiently, so there will be no danger of tearing the metal while bending it forward to its required position, where there is a high arch.

After swaging the base to conform to die, turn up a rim as explained before and trim the heel of the metal so you will have about $\frac{3}{16}$ of an inch of the metal at the median line and tapering towards the condyles to bend forward. After you have a rim turned, the heel bent forward and raised to such a height as you desire the thickness of porcelain to be when baked, protect them with the plaster as explained before and swage. The object of turning forward the heel of base is to not only strengthen it at that point, but also to form a smooth and unbroken surface over which the tongue will pass.

In has been the general practice in forming a metal base for a continuous gum piece to solder a platinum wire along the outer margin of the rim of a metal base, and reinforce the heel of the palatal portion of that base by soldering to it a strip of the same metal of which the base is composed. While this answers the purpose for which it was intended, it requires considerable work to do it properly, and if these attachments are not thoroughly protected there is danger of the solder disappearing when you fuse the porcelain. And then there remains the question, whether a wire of No. 20 gauge, soldered to the rim, or the heel reinforced by soldering a No. 35 or No. 30 gauge metal to it, would produce the same rigidity or unique appearance as it would if its rims were turned and its heel strengthened by turning forward the metal of the original base.

ARTISTIC PROSTHETIC DENTURES.

By L. W. Skidmore, D.D.S., Moline, Ill. Read Before the Iowa State Dental Society, at Dubuque, May 1–3, 1900.

If there is one branch of dentistry more than another in which reform is needed, I think it is in the making of artificial dentures. It seems to me that it is time when false teeth of such attractive whiteness, arranged in beautiful, symmetrical rows, all looking

alike, and reminding one of the perfect rows of cups in a butler's pantry, should become a thing of the past. Every effort should be made to arouse the artistic sense of prosthetic dentists, that they may solve the problem of combining utility and artistic effect. Prosthetic dentistry, viewed as art work, is of great interest. The denture should serve as a restorer of youth to age, and comfort to discomfort, should fit the mouth, and should articulate properly in order to serve the purpose of mastication and restore expression.

The makers of artificial dentures are many, although the dental artists are few, but with the appliances now at hand it is possible to deceive the closest observer. Every case should be a special study, as there is no rule for arrangement of the teeth which will apply to all cases. It happens too often that the entire aim is to give patients something with which they can chew their food, and which will possibly help them to speak more plainly. Conformity of the teeth to the other characteristics is entirely neglected, dentists and patients being satisfied if the teeth are arranged symmetrically. The artistic requirements are being more carefully looked after now, however, and I hope the time will soon come when these dentures, so glaring because of their perfect appearance, will disappear entirely. No safer guide can be found than Nature, which always makes the teeth of each individual conform to the other characteristics of the face and physique.

A simple method by which the individual characteristics of the patient may be preserved in the alignment of the teeth, is what I wish to present. When the patient comes to have his teeth extracted, that they may be replaced by artificial ones, I first examine the mouth, and if there are enough teeth remaining to be of assistance, I take a piece of wax, softened, and have patient close the teeth on it. This I remove carefully, and when the teeth are extracted they are washed and placed in their impressions in the wax. Plaster is then run around the roots, which holds them in position. When this is hardened it is turned over, the plaster varnished and oiled, the teeth of opposite jaw put into the wax on this side, and plaster run around them as before. If the teeth of the opposite jaw have not been extracted, it also is filled up with plaster, and we then have the teeth set in plaster exactly as they were in the mouth. This case is now set aside until the patient is ready for his new teeth, and when it is brought out and inspected, I assure

you it often proves a valuable help, for you are thus enabled to preserve in the artificial set the characteristics of each patient as they were in their natural teeth. You could not do this in any other way.

X-RAYS FREAKS.—The Fourth Chamber of the French Civil Tribunal is being called upon to decide an action for damages brought against a medical man for unskilful application of the X-rays. It appears that a woman suffering much from facial neuralgia consulted her doctor, who suggested treatment by the X-rays. She accordingly underwent nine seances at his hands, but the tenth was conducted by one of his assistants. Upon the following morning she awoke with a tumified eye and a bald patch on the right side of her head, and attributes her woeful condition to the assistant's lack of skill, and consequently holds the doctor responsible for the results. The finding of the court will be awaited with much curiosity.—*Pharm. Jour.*

REGULATION OF SALE OF PROPRIETARY MEDICINES.—The Supreme Court of Illinois, in Noel vs. People, holds unconstitutional so much of the pharmacy act of the state as restricts the sale of patent and proprietary medicines and domestic remedies by any other person than a registered pharmacist. It is unquestionably true, it says, that the state has as much right to regulate the sale of patent and proprietary medicines and domestic remedies as it has to regulate the sale of any other kinds of medicines and remedies. But such medicines and remedies are generally put up in sealed packages, in which form they can as well be sold by any person as by a registered pharmacist. True, it was contended that registered pharmacists are more likely to know the qualities of these patent medicines than other persons who are not registered pharmacists. But the court's answer to that is that registered pharmacists will be as apt as other men to sell such patent medicines as there is a public demand for, when they are relieved of all responsibility for the character of such medicines, and are not required in any way to guarantee their character or adaptability to the cures which they claim to effect. So it concludes that the public health is not protected by limiting these sales to registered pharmacists, who make no examination of what they sell, and hence holds that the monopoly conferred on them by this portion of the pharmacy act is unconstitutional. It also condemns the act in so far as it confers upon the board of pharmacy the power, in its discretion, to issue permits to persons, firms or corporations engaged in business in villages or other localities, empowering them to sell the usual domestic remedies and proprietary medicines under such restrictions as the board may deem proper. A law which thus invests any board or body of officials with a discretion which is purely arbitrary, and which may be exercised in the interest of a favored few, the court holds, is invalid. However, while the court for these reasons holds the pharmacy act to be invalid in the respects pointed out, it yet holds it to be valid, so far as it applies to persons retailing, compounding or dispensing drugs, medicines or poisons where the person so retailing has, at the same time, put up or prepared or compounded the drugs or medicines so sold by him.—*Jour. A. M. A.*

Digests.

AQUEOUS SUPRARENAL EXTRACT. 1. The aqueous extract of the suprarenal gland is the most powerful astringent and vasomotor constrictor that we possess. 2. Its action is peripheral, is exerted directly on the vessel walls and basement membrane, and is limited only to the parts with which the drug comes in contact. 3. It is non-toxic, non-irritating, can not produce a vicious habit, and may be repeatedly used on the same individual without losing its power. 4. It prevents to a marked extent the toxic effects of local anesthetics by retaining them in the tissues and preventing absorption. 5. The aqueous extract readily decomposes on account of the large amount of animal matter present, but the degree of putrefaction in no way impairs the physiological activity. 6. It first blanches and then contracts mucous tissues, and will subdue active or passive inflammation. 7. Its activity is not impaired by boiling and it may be repeatedly sterilized in this manner, while carbolic acid will preserve the solutions indefinitely and in no way impair their value. 8. It will prevent primary and greatly lessen the danger of secondary hemorrhage. 9. Its action is manifested in twenty seconds, attains its maximum in five minutes, and lasts from one to twenty-four hours. 10. It increases the tone of the parts, augments the action of other drugs, especially cocain, and diminishes postoperative swelling. 11. It markedly restricts exuberant granulation tissue wherever situated. 12. Finally, it diminishes secretion and aids in rapid healing.—Dr. Somers in *Merck's Archives.*

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COMPLETE EXTIRPATION OF TONGUE AND FLOOR OF MOUTH. G. Koltze, *Deut. Zeitsche. Chir.* The patient was a man of 53. In September, 1898, a tumor developed on the point of his tongue. This was removed by Langenbeck's method, of sawing through the left side of the lower jaw. The growth, however, returned by June, 1899, and had developed to such an extent that it was considered unadvisable to operate. When examined by Rose, the tongue was found thickened, the left side more than the right, it was wrinkled and hard, and the swelling could be traced clear to the base of tongue. The posterior portion of tongue closely approached the soft palate, and the anterior almost touched

the upper incisor tooth, so that the patient was forced to keep his mouth open the greater part of the time. Operation was done under chloroform narcosis. An incision was carried through the entire thickness of the under lip down to the bone; another cut running at a right angle from the first was carried along the edge of the lower jaw to the left angle of the mandible. A skin flap was turned upwards from the lower jaw, carefully avoiding the mucous membrane, and an exarticulation of the left side was done. The horizontal incision was then carried toward the right angle of the jaw, and the latter sawn through with a chain saw just below the ascending right ramus. The vessels were tied as soon as they were cut, including both lingual arteries and the left facial artery. Starting from the left side of the wound, the tongue and its adjoining infiltrated tissues were cut away with scissors and knife, and that portion of the tongue and floor of the mouth still in connection with the hyoid bone was removed with Chassaignac's ecraseur, just immediately in front of the epiglottis. The diseased tonsils were removed. The mucous mumbrane of the epiglottis was then stitched to the remains of the mucous membrane of the under lip, and after removal of an inch or more of the soft parts of the chin, the skin of the two sides of the wound was sutured together. Feeding of patient after operation was done through a tube introduced by himself. In 9 days the external wound had healed, and the granulated surface in mouth had become much smaller. Fifteen days after operation patient left hospital. He could swallow better than before operation, and speech was improved.—*Phila. Med. Jour.*

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ANGINA LUDOVICI. By Arch D. Jones, M. D. Mrs. W., aged 47, had been having an ulcerated lower molar treated. The first additional disturbance she noticed was a swelling and burning sensation under tongue on same side as the ulcerated tooth. She rinsed her mouth with a preparation given by her dentist, thinking it might be irritated by the discharge from her tooth; but that did not suffice. In a few hours the inflammation had spread to the tissues under the other side of tongue. She came then immediately to her dentist, who sent her to me. By that time, on opening her mouth it gave the appearance of having two tongues, the sublingual tissues pushing out and up, almost protruding between the teeth. Her tongue was so much crowded that she could speak with diffi-

culty. She complained of a burning, throbbing sensation in the tissues under the tongue. I found her temperature 101.3°, pulse 102. I sent her home and to bed, ordering the ice-bag applied, and the painting of the inflamed parts every hour with 4 per cent cocain solution. I went promptly to confer with her dentist, advising immediate removal of the tooth and thorough irrigation and drainage of the cavity. The above was done, but still the inflammation continued to advance, the pharyngeal tissues being considerably involved by evening, 14 hours after the first indications of the inflammation. With morning the dyspnea was considerable, but not alarming. The submaxillary and cervical tissues were swollen and painful. The abscess cavity was again thoroughly cleansed, although there was very little accumulation. At 6 p. m. the inflammation had not advanced, the dyspnea was about the same. On the morning of third day the swelling was markedly diminished. The cavity was again irrigated, no discharge being noticeable. The improvement from this on was steady and rapid. There was suppuration in the inflamed tissues. She called at my office on the sixteenth day after the beginning of trouble saying she was perfectly well.

Whether infection was due to the abscess cavity or to the use of contaminated instruments in treating the diseased tooth I cannot say, but rather incline to the theory that it was originated by abscess. I believe by prompt removal of tooth, thorough evacuation of the pus and irrigation of the cavity that a fatal issue was avoided.

In the further treatment of the case the cocain applications were abandoned after 6 or 8 hours, but the ice-bag was continued throughout the attack. The bowels were opened by the free use of salines. A liquid diet was necessarily used and alcoholic stimulants were freely administered.—*Phila. Med. Jour.*

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BOXINGS. By Dr. George S. Allan, New York. After I had put in facings for a month or two, to my disgust I found now and then the edges were not perfect, and again, here and there a facing came off. Still, there was a real merit in the method which I could not afford to drop. I kept trying different methods, and finally took up porcelain. I had a great deal of satisfaction putting in inlays. It then came into my head, working at the two, that there might be

a combination which would be satisfactory—that is, something having the value and a great deal more strength than the porcelain.

My method consists of an inlay made of two shells of gold, an outer and an inner one, soldered together at the margins, the interior being filled with cement when in place. I make these inlays or boxes with the assistance of my laboratory man, and I think to do this work successfully and with little loss one should certainly have the help of an expert plate-worker. The first step is to prepare the cavity, filling the undercuts, if any, so that the impression-material will easily come out of it. It is necessary that the margins be especially prepared; they should be clean cut and smooth. I then take an impression of the cavity with modelling compound and hand the impression over to my plate-worker. I will here read a paper prepared by my plate-worker, giving his method of procedure after the impression leaves my hand: "The model is made of plaster of paris in the ordinary way. Use mouldine for making a mould of the cavity. Make a die of die-metal, using a piece of soft lead for the counter-die. Swage pure gold (30 gauge) in the cavity. Great care must be taken in truing the gold to the exact margin of the cavity. This can be done in the mouth, or if the outlines are clear it can be done on the die or model. Melt a small drop of solder in the bottom of a little cup or matrix, being careful not to let it flow on the margins. This will give it strength for handling. Burnish the cup in the cavity; see that the margins correspond with those of the cavity. Take an impression in wax or compound to get exact contour. The thickness of gold must be allowed for in the wax, to avoid bite striking too hard. A die is now made as before; 22-carat gold is used, as it will stand wear better than pure gold. The two pieces are soldered together, the edges trimmed and polished. A few saw-cuts in the pure gold inner shell will be sufficient for the cement to adhere."

After the inner shell has been returned from my mechanical man I place it in the cavity and burnish the edges carefully, seeing that they fit closely at every point. I then contour it out with wax, getting the proper shape and articulation, and return again to my plate-worker, who proceeds as he has described. When the finished box is returned to me, with a file I serrate the lower surface, at the time filing through the plate so that in setting the cement may be forced in, entirely filling the box. After the box has been filled, a

small excess of cement is placed on this under surface, the boxing pressed home, and the excess of cement squeezed out. I believe this makes a filling more durable than a porcelain inlay because there are no thin edges that can be checked off, and there being no danger of breaking, however thin the box. It is better than a facing, because the margins are not liable to peel up, an objection I can urge to the facing. It is better than the all-gold inlay built up with solder, because with much less labor a perfect articulation is obtained without the grinding necessary in an inlay of this kind or a porcelain inlay. I can not state that this method is new; I only know that it is new to me.—*International, Feb. 1901.*

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RECENT DEATH UNDER NITROUS OXID GAS. By Dudley W. Buxton, M.D., B.S., M.R.C.P., London. In a paper read May 17 I drew attention to the peculiar dangers of anesthetics in cases of angina Ludovici and kindred conditions. These conditions are capable of a general anatomical description, and as the case to be referred to in the sequel is a striking instance of death arising through their agency, it may be well to devote some space to their consideration. Individuals differ widely in the anatomical conformation of what in common parlance is called "the neck." The short or bullock-necked persons are recognized as a type, and present in its simplest form the class of cases in which danger from anesthetics may be expected.

The neck structures are less pliant, the head movements less free in these persons. When an attempt is made to turn the head to the side it is resisted by the muscles passing from the trunk to the head. The space between the walls of the faucial opening is usually lessened, and the structures forming it are commonly thick and fleshy. Under nitrous oxid gas the tongue and faucial pillars become engorged. The actual space available for respiration is thus further diminished and the dyspnea increased. A commonly associated difficulty in these cases arises from the lessened freedom of mobility of the jaws. As the congestion of the soft parts increases an almost spastic closure of the jaws takes place. When, as is so often the case, nasal respiration is impeded by old thickening at the posterior extremities of the nares by a spur or deflected septum, the perviousness of the upper airway is still more interfered with and the dyspnea becomes intensified.

In pathological conditions the impediments arising as a result of thickening of the tissues about the upper air-passages are increased, and the incident dangers *sub anesthesia* exaggerated. To understand such conditions it is necessary to refer to the arrangement of the deep cervical fascia. Speaking broadly, this fascia may be said to surround the neck (the superficial layer) and to send inward to the deeper structures processes which ensheath the muscles and become attached to the vertebræ behind, the posterior surface of the clavicle, and inner side of the first rib in front. Other processes pass to the lower jaw, the zygoma, the sternum, and muscles in relation with the thyroid cartilage and trachea.

Under normal conditions these facial septa support, but when inflammation exists they tend to bind and render the neck structures unduly rigid. It is not uncommon in cases of lymphadenitis and perilymphaden to meet with extreme rigidity of all the structures adjacent to the upper air-passages, leading to difficulties during anesthesia; but the most pronounced thickening occurs in suppuration involving the structures about the lower jaw. The outward appearances in these cases do not always give evidence upon superficial examination to the degree of involvement of the subjacent structures. As pointed out by Ludwig, the suppuration runs along the divisions of the fascia and produces very intense edema of the tissues about the laryngeal and faucial openings. Edema of the glottis forms the culminating point of this, involving the greatest danger to life. It is hardly needful to do more than mention that goitres and especially the "plunging" tumors constitute another cause of pressure leading to stenosis of the airways. In thickening of the structures of the neck, caused by suppuration, we meet with enlargement of the tonsils, tendency to secretion of thick, glairy mucus, thickening of the structures about the air-passages, causing pressure upon them and edema, which may involve the mucous membrane of the trachea as well as that of the epiglottis and adjacent structures. The narrowing of the airway thus induced causes dyspnea, which is more especially inspiratory, although expiration is also affected.

In this condition if the patient is given nitrous oxid gas, the result must be, unless means are taken to avoid it, that the venosity of the already carbonized blood is increased, the circulation in the tongue and faucial structures is further interfered with, the tongue

becomes swollen, and this hampers respiration still more. Under such circumstances the liability to dangerous complications is very much increased.

The death under gas at the Great Northern Hospital unfortunately only too clearly exemplifies these statements. In the evidence given the following facts transpired: The patient, aged thirty-six, was seen at the hospital, and was suffering from a large abscess involving the tissues on the left side between the submaxillary gland and the ear, but extending also beyond the middle line to the right side. The left tonsil was considerably swollen. The man, although advised to enter the hospital as an in-patient, declined and had therefore, as the condition was urgent, to be treated as an out-patient. He was seen at noon and the operation was undertaken at 4:15 p. m. on same day. He was said to drink at times, but no evidence exists to give this any direct bearing upon the case. No statement is made as to whether or not the man spent the four hours between noon and 4 p. m. in or out of the hospital, but presumably it was outside the institution, and so no special preparation was made. It is common to ignore the necessity of preparation for gas; but in surgical cases of gravity, such as the one under consideration, it is wise to make a careful preparation of the patient as regards food, alcohol, etc., even when gas is used without ether or chloroform.

The patient was given nitrous oxid gas by one of the hospital residents, and the following is the description given of the procedure. An "ordinary gas apparatus" was used, fitted with valves. "First pure air, then a few respirations of air and gas, then pure gas" was inhaled. "One bag (? full) and a quarter was given in all." A statement made by the operator, another resident, affirms that "at no time was the patient breathing in and out of the bag." It is difficult to understand that a little over two gallons of nitrous oxid would induce complete anesthesia in a man of the laboring class, unless the most complete to-and-fro breathing into the bag was adopted, and a large proportion of carbonic dioxid thus brought into adjuvant action with the nitrous oxid. Probably one or the other statement is open to correction, or at least modification.

The man is said to have taken the gas well, by which we may assume cyanosis, stertor, and marked dyspnea were not early phenomena in the case. When ocular reflex was still present ("not

entirely gone," sluggish) the face-piece was removed, and an incision into the abscess was made. The pulse was regular, the respirations were deep and regular, the pupils of moderate size, and conjunctival reflex was present. The breathing then stopped, "after the excited stage was over." It is not clear what degree of narcosis is referred to as "the excited stage," possibly the appearance of jactitation. The cessation of breathing was accompanied by the appearance of cyanosis. Respiration appears never to have reappeared after its cessation. As artificial respiration failed to ventilate the lungs, tracheotomy was performed. The necropsy showed that there was much edema of the uvula and faucial tissues; also of the epiglottis and upper part of the larynx. The left heart was empty and both lungs much congested. It is a remarkable feature of this case that no dyspnea is recorded as having occurred during the induction of anesthesia. As a rule not only is dyspnea present, but cyanosis soon appears, and these symptoms of impending asphyxia warn the anesthetist to desist.

That death was due to edema glottidis is evident, but how far the giving of gas accelerated the result must remain an open question. Possibly there may be two opinions. There is no doubt, however, that this particular anesthetic is not the best one for persons with edema involving their air-passages. If given at all, it should certainly be given largely diluted with oxygen. The after-treatment of the case also illustrates the fact that no procedure short of opening the trachea offers any chance of success. The apnea is due to no central failure of nervous control, but simply to mechanical obstruction, and nothing less than removal of that obstruction can be of the slightest value.

As to the question, Does this case in any way shake the belief that if properly given nitrous oxid gas is practically a perfectly safe anesthetic? I think not. The selection in this case was unfortunate, but nothing occurred that might not have been expected, and what possibly might have arisen if no anesthetic had been employed. In all such cases the risks of anesthesia, even in the most practiced hands, are increased; but such risks have reference to the individual and his condition, and not to the anesthetic as such. In fine, one may say that, like most if not all the preceding cases of death under nitrous oxid, the fatality in question simply shows that gas, as gas, possesses few dangers, and these are those arising from

mechanical interference with respiration. These are now well known and can be guarded against or avoided altogether. It also emphasizes the fact that even so safe a body needs care and judgment as to its applicability in any particular case.—*Dental Record.*

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RIGHT OF RECOVERY FOR OPERATION.—It appeared at a trial term of the Supreme Court of New York, Kings County, in the case of MacEvitt vs. Maass, that the plaintiff, a physician and surgeon, was called in by the defendant to treat his wife. He made an examination of her, and informed the defendant that a surgical operation was necessary. They entered into an agreement that the plaintiff should perform it for $75. The trouble was an internal one somewhere in the abdomen. The plaintiff testified that a day or two later he made another examination of the patient and found conditions which were entirely new to him, and foreign to the surgical operation which he had proposed; that the first diagnosis was entirely wrong; that her condition was of much greater gravity than had been supposed from the first diagnosis; that the operation first mentioned was entirely unnecessary; that an entirely different surgical operation, but in the same region, was necessary; that it was one which would jeopardize the patient's life, whereas the first one mentioned would not have done so; and that he substantially informed the defendant of all this. But he did not say that the new operation was worth more or less than the one first proposed, or that he would charge for it more or less than the sum which had been agreed on. In fine, nothing was said by either on the subject of compensation for the new operation. The defendant simply assented to the plaintiff performing it. It was then left to the jury to find what the facts were, and to say whether the agreement for a compensation of $75 was superseded, and they gave the plaintiff a verdict for $225. This meets the approval of the court, which holds that the legal conclusion was that the defendant in assenting to the performance by the plaintiff of the new operation must necessarily have understood that the agreement previously made could not be carried out and was at an end, and that he was to pay for the new services what they should be reasonably worth. If it had turned out on the second examination that the operation first mentioned was not necessary, and that a different and only trifling operation was necessary, and the plaintiff had informed the defendant thereof, the

plaintiff could not afterwards have claimed that $75 was agreed upon for that operation, although it was worth only one-third of that amount. The law would be that both parties necessarily understood that the first agreement was no longer in effect, though that was not in so many words said. Moreover, the testimony of the plaintiff and of the surgeons who assisted him in the operation, concerning the ailment of the patient and the particulars of the operation, having been excluded, as privileged, the court holds that their testimony as experts in respect to the value of the plaintiff's services could not be objected to on the ground that as the nature and particulars of the surgical operation had not been given in evidence, there was no basis for such testimony. There was in evidence that a capital surgical operation was performed, of the time it took, and of the number of visits the plaintiff made to the patient before and after it, and the statute having excluded the particulars as to what the operation was, the court holds that such evidence of value by the surgeons who saw them, being the best evidence which the nature of case admitted of, must be held admissible.—*Jour. A. M. A.*

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SPINAL ANESTHESIA. The method of producing anesthesia by subarachnoid injections of cocain solution into the spinal canal, suggested by Bier and exploited by Tuffier, has now been employed by so many different observers, who have reported their results, that a fairly reliable conception as to the efficacy of this procedure and as to its dangers may be obtained. It seems to be well established that an injection of twenty minims of a one per cent solution of cocain into the subdural space by means of a needle driven in between the third and fourth lumbar vertebræ will occasion total anesthesia of the lower extremities, the pelvis, buttocks, and inguinal region for a period varying from thirty to sixty minutes, without interfering with the consciousness of the patient and without producing signs of cocain poisoning. During this period major operations, such as resection of the knee-joint, amputation, and the radical cure of hernia, may be undertaken and carried out without the patient's experiencing the slightest sensation.

Severneau has employed this method in seventy cases, the dose of cocain varying from one-sixth to one-third of a grain. He notes that although anesthesia was usually produced, the after-effects were sometimes extremely alarming; profound weakness, pallor, irregu-

larity of heart action, stiffness of the neck, headache, and vomiting were sometimes persistent for two or three days and were obstinate to treatment, though caffein and an injection of artificial serum seemed helpful. As a rule, these symptoms were but slightly marked and did not last longer than twenty-four hours.

Tuffier notes that, following the injection, anesthesia begins by a sense of pricking, crawling, and weight in the feet and legs, weight in the epigastrium, some nausea, and exceptionally vomiting. In addition the patients become pale, have flashes of heat, sweat profusely, and the pulse becomes rapid. Headache is nearly always pronounced, but as a rule disappears in the night following operation; sometimes it is agonizing and lasts for days. Tuffier has employed the method in one hundred and twenty-six cases without fatality in so far as the injection of cocain was concerned.

Racoviceavnu has practiced these injections in one hundred and twenty-five cases, failing entirely to produce anesthesia in four, while in two others the effects were so transitory as to be of no service. In eighty-three cases the after-effects were extremely well marked, though not as a rule threatening. Marx has employed this method of anesthesia during labor, and states that it checks almost entirely the pains without the least danger to mother or child. Indeed, the mother does not know the child is delivered till assured of the fact by its cries. Complications of a severe grade were not noted. Nicolletti, on the basis of an experimental research, maintains that these subarachnoid injections cause no anatomical alterations of the nervous elements.

In making these injections the skin is thoroughly disinfected as for a surgical operation, the body of patient is flexed, the spinous process of the fourth lumbar vertebra is outlined (and this is rendered easy by remembering that between the spinous process of the fifth lumbar vertebra and the first sacral vertebra is a pronounced depression); the hypodermic needle, between three and four inches in length, is driven in the middle line—preferably half an inch to one side—upward, forward, and when the lateral puncture is made a little inward, until the escape of some drops of cerebrospinal fluid indicates it has reached the subarachnoid space. Should the point of needle encounter the bone, it is shifted until the intervertebral space is found. The cocain solution is then injected and the needle withdrawn. The procedure is an extremely easy one.

Except for the disagreeable and often threatening aftereffects, this method of anesthesia would in its workings be ideal. These aftereffects can scarcely be attributed to the toxic effect of cocain, and are probably due to a secondary congestion. It would seem wise to substitute for cocain either eucain, which may be thoroughly sterilized by boiling and is but one-fifth as toxic, or nirvanin, which is in itself antiseptic and is but one-tenth as toxic as cocain. It is improbable, however, that this substitution will be followed by sequelæ less marked than those which develop when cocain is employed in moderate doses, hence it would seem that subarachnoid injections are not likely to replace the already well established and comparatively safe methods now in vogue, save in exceptional circumstances. Until the method has received a more extended trial, and its immediate and remote dangers are better understood, it is not one which should be generally adopted.—*Therapeutic Gazette.*

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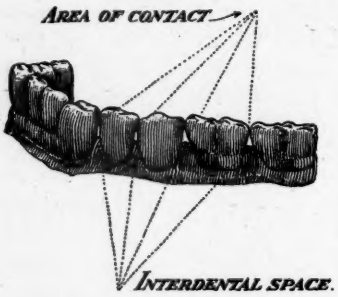
INTERDENTAL SPACE; LOSS AND RESTORATION. By J. R. Clayton, D.D.S., Shelbyville, Ind. The recurrence of decay at cervical border of fillings is the great drawback to success in saving teeth. Fillings presenting an otherwise perfect appearance are soon found defective at that point, and how to repair them so as to save both teeth and reputation is one of the things that gives the dentist much concern. For several years the writer has tried to ascertain what might be termed the gross cause of decay; to see if there were not some cause remote from the tooth itself that, in spite of the best efforts spent upon it, continued as before to destroy the tooth and hopes both of patient and operator.

The first inquiry is, Is the cause of these failures unavoidably inherent in the mouth? The answer must necessarily be in the negative; then follows the second query, Is it the result of bad judgment in the selection of filling material, imperfect manipulation of it, or, covering all that may be in the subject, may we not ask if the operator has not failed to get mental grasp of all the conditions that make for failure or failed in meeting these conditions? This, then, may be taken as the central thought of our study.

Taking up a skeletal maxilla with a complete set of teeth, we find between each tooth and its neighbor a triangular space—the interdental—formed and protected by an expansion of the crowns of the teeth mesio-distally; and for convenience we will confine ourselves

to the study of molars and bicuspids. (Fig. 1.) The base or generally shorter side of this space rests upon the alveolus, which is plentifully supplied with foramina for the passage of nutrient vessels and nerves; its two longer sides are formed by the proximal surfaces of the teeth, which in some types are concave bucco-lingually as the enamel slopes away towards the cervical margin, increasing by so much the dimensions of the space in the mesio-distal direction.

FIG. 1.



It will be observed on cross section of maxilla that the alveolus is composed of cancellated tissue which is filled into a sort of canal formed by the inner and outer plates, which are very solid and between which the roots of the teeth are placed, surrounded and supported by this cancellated or spongy tissue, rendering the changing of the position of the teeth in the direction lengthwise of the canal one of very easy accomplishment. This will be referred to later on.

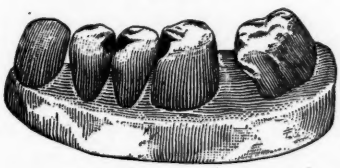
In a healthy mouth the interdental space is filled with gingival tissue, very rich in blood-vessels, remarkable for its low degree of sensibility, even capable of enduring rough usage so long as the physiological action is of the best.

Studying the teeth, we find that each juxtaposes to the other at the proximo-grinding angle, and that this juxtaposition extends gumward from one-twentieth to one-twelfth of an inch, according to the type of tooth, and for convenience of expression we will call that part of the tooth that so touches with its neighbor the area of contact, and it is the vital point of our contention. (See Fig. 1.)

Pursuing our study further, we find that in the first stages of

proximal decay the attack has been made somewhere within the area of contact, and under its greater ravages the marginal ridges are undermined, all supporting dentin destroyed, and at last a cavity involving the larger part of the proximal surface of the tooth appears. Experience teaches that so soon as the marginal ridge of any tooth gives way, the teeth posterior thereto push forward—the cancellated structure of the alveolus offering but little hindrance—the area of contact is widened and deepened, its cervical margin at last embracing or even passing beyond the cervical margin of the enamel. (See Fig. 2.)

FIG. 2.



What have we now? Instead of a beautiful pink tissue, closely adherent to the necks of the teeth, circulation perfect, physiological action complete, all protected by the overarching form of the teeth, the space becomes contracted, the festoons of the gum, congested and enlarged, fall away from the tooth; the soft tissue by the engorgement is forced through the elliptoid space between the teeth at the cervical margin, and the cavity of decay is filled with the engorged mass, no part of which can be touched without a profuse hemorrhage. There is probably no other condition of the mouth so perplexing to the inexperienced operator, and yet it is one which to a degree is presented in nearly every mouth that comes within the purview of practice.

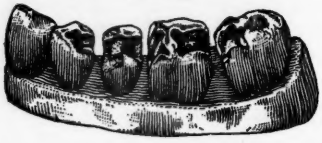
Taking it for granted that up to this time there has been no pulp exposure, what is too frequently the mode of practice? The gum is gouged out of the cavity, some styptic applied to the bleeding surface, rough margins of the cavity walls are pared away with the chisel or rasped away with the file, the filling is made flush with the cavity walls, and the patient is dismissed under the impression that first-class work has been given. (See Fig. 2.) In what does the condition now prevailing differ from that above described? Hardly in any essential thing that makes for good health in the mouth. The area of contact is coextensive with the entire proximal surface.

The gums bleed upon touch, and cleaning becomes so painful that the patient at last abandons it altogether.

One might say now that the recurrence of decay could not be avoided, that the conditions of the mouth rendered it unavoidable, no matter what material was used or how skillful the manipulation. Here, now, is the contention of this paper—that the operator has failed to get a mental grasp of the situation and the requirements; he has looked only at the cavity in the tooth, and has failed to see the condition which existed prior to the attack, the loss of which condition was due to decay, and the restoration of which, as well as the filling of the tooth, all fall within the scope of his duty. No matter how good his will, the will is not here taken for the deed.

No mouth has been properly prepared for operation upon the proximal surface of the tooth or for crowning until the teeth themselves have been separated to an extent equal to the mesio-distal diameter, with an additional separation sufficient for the use of the means employed for finishing. (See note.) (Fig. 3.) Putting the idea in another form, it may be said that no tooth has been put in proper position in the alveolus for filling until, when restored to normal contour, the area of contact shall have been reduced to its proper limit, which as already stated, is from one-twentieth to one-twelfth of an inch from the grinding surface gumward.

FIG. 3.

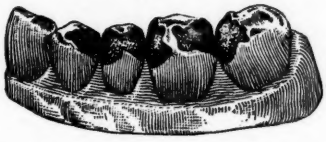


To attain the best possible result the following method is certainly the best, but may not always be practicable, especially in the front teeth. However, the necessity for it is not so great perhaps as in the posterior teeth, because food particles are not so apt to be forced between the former as the latter. In preparing the cavity, after all the other requirements have been fulfilled, the margins thereof should be so extended that they will lie outside of the area of contact. (Fig. 4.) If it is a fact that decay attacks the tooth within that area, it can readily be seen that if the margin of an indestructible filling-material be extended beyond the margin thereof,

immunity from decay must be the result. It was a reaching out after this that gave rise to the practice of "extension for prevention," a very efficient but empirical method. It is obvious to all that this separation must be made by pressure. In separating teeth in which the decay has not yet destroyed the marginal ridge, that is to say, no change has yet been made in the alveolar relation of the teeth, force exerting immediate pressure may be used, but never should the file or chisel be used to get working space anywhere.

If much destruction and loss have resulted, the best means is cotton, and in using it the cavities should be opened up, the cotton put in, and the patient instructed to replace it daily for such period of time as may be required. If very great destruction has occurred, even though to crown what is left may be purposed, the best, surest, cleanest and most painless method is the use of the red gutta-percha base-plate. Clean out the cavity; if the pulp be exposed and living, or dead and septic, dispose of that; crowd into the space a wad of softened gutta-percha; tell the patient to bite on that side and return in three months, when in all probability sufficient space will have been gained.

FIG. 4.



Let it also be impressed upon all the necessity of filling the tooth out full and square so as to restore the marginal ridge; in finishing the filling pass nothing between the teeth at the marginal ridge except the steel ribbon. Finish at the cervical margin with such instrument as may be best adapted, leaving all the material in this marginal region that has been put there. Many an otherwise good filling has been ruined by filing away here to finish some place else.

NOTE.—The writer regards the use of the disk in finishing fillings as bad practice, as it requires more care than is ordinarily displayed to prevent cutting away in the region of the area of contact. We get little enough material there anyhow. Finishing is best accomplished by passing first the steel ribbon saw through between the teeth filled, then with such instruments as may be used dress

the filling from the cervical margin towards the grinding surface. As soon as sufficient space has been cleared, cut a strip to a point, pass it into the space and complete the polish. The disk may be used to finish the filling on the buccal and lingual aspect, but never should be passed between the teeth. Preserve intact all the material at that point.

To best complete the support which the area of contact should give to the gingival tissue and teeth themselves, the marginal ridges should be fully restored by the filling, leaving the proximal grinding angle as square as can be made without irritating tongue. Many fillings are so finished here that there is a deep cavity into which meat-fibres are forced in mastication, which in addition to irritating the soft tissue, constantly disturb the teeth in the alveolus, preventing that stability which would otherwise result.—*Brief, Feb., 1901.*

* * *

GOLD-BLINDNESS, OR RETINAL ASTHENOPIA AND ITS TREATMENT. By L. W. Fox, A.M., M.D., Philadelphia. Read before Pennsylvania State Dental Society, July 5, 1900. My attention was first called to this defect of vision five years ago by a gentleman of your profession, who at times lost the power to distinguish the gold from the walls of the tooth after working on the tooth for a short time. At first several months intervened before this repeated itself, but as time went on it became very annoying and the intervals of attack grew shorter, so that he became alarmed and sought my advice about it. Since then I have had a great many similar cases.

Retinal asthenopia means an abnormally rapid exhaustion of the vision. The sight fades away; the object looked at gradually disappears, especially when the eyes have been fixed upon a certain small object for a longer or shorter time. This condition of retinal exhaustion is exaggerated when such a warm color as yellow is the color under observation, or when the eye is overstimulated by an electric or Welsbach light. Age does not predispose to it nor youth exclude it, for during the past winter I had six young dental students who were all similarly affected, and as many practicing dental surgeons past thirty-five years of age. A history of one is the history of all, yet other factors than simply retinal exhaustion enter into the causation of this defect.

This particular form of asthenopia and the subsequent scotoma

(blind spot) are, in my judgment, primarily produced by the excess of yellow rays from the gold metal, which first overstimulate the rods and cones of the retina, and then, as a sequela of this overstimulation or excessive vibration, exhaustion follows and scotoma or blind spot is the result. "It is well known that looking through a yellow glass at first causes a very decided feeling of being dazzled, although, objectively, less light enters the eye, inasmuch as the violet rays are removed." I know an individual in whom nausea is produced whenever she looks at a large object painted yellow; the vision becomes too much stimulated, and by reflex action through the retina and optic nerve, the brain, and the great sympathetic nerve, the sensation of nausea is produced.

In former years marksmen used yellow glasses to improve distant vision. It is also well known that in the higher altitudes men see farther on account of the rarer atmosphere: then, too, owing to the absence of moisture in the atmosphere, the yellow rays have more power of stimulating the rods and cones of the retina and act like a yellow glass. It may be easily understood that if the yellow rays have the power of so overstimulating the retina in high altitudes, how much more will any yellow metal bring about gold-blindness when the vision is concentrated upon it. The refulgent rays of the sun will cause blindness by excessive stimulation, and in a lesser degree will a bright yellow glistening body produce a blind spot. In the mechanical side of dentistry it is necessary to fuse gold plate; this is done at a great expense of carbon, which when burning at high temperature produces a white light, but in reality an excess of the yellow ray exists. By watching this process twenty minutes or half an hour a blind spot would appear in each eye. The excessive stimulation of the retina produces the same condition as when looking at the sun or looking at molten iron. Men who follow these occupations become the early victims of cataract, proving that too much stimulation of the retina and ciliary muscle by these bright lights produces serious changes in the nutrition of the crystallin lens. All this work should be done only under the protection of properly tinted glasses. A member of your society came under my care for gold-blindness. He had been experimenting with the fusing of metals, and for forty-eight hours after being thus engaged his vision would appear veiled, as if he were looking through a thin gauze—evidently a slight retinitis from the over-

stimulation of the yellow rays. After proper adjustment of colored glasses he found relief. Glasses which correct hyperopia or far-sightedness in Philadelphia will not give comfort in Denver, on account of the excess of yellow rays in the daylight; glasses must be changed to weaker ones, especially if high numbers are worn, and that little but overacting ciliary muscle must be given a rest.

The name "gold-blindness" I give to this defect because it follows working on yellow metals. Not only is the filling lost to vision, but also the contour of the cavity. The defect does not become manifest when working upon the white or amalgam filling; at least this trouble has not been mentioned by any one of my dental patients. I do not wish it to be understood that this defect is allied to color-blindness; it is not. The color-blind fails only to recognize color; he always sees shape and form. I assume, of course, that he has no visual defect. The other factors which enter as an exciting cause are, first, errors of refraction, electric or Welsbach lights, and excessive use of tobacco or alcohol.

The far-sighted individual with a certain degree of astigmatism becomes the first victim. The excessive amount of accommodation which a hyperope uses in looking at a close object without glasses is very great, and consequently the dioptric apparatus becomes very much irritated; tears form in the eyes, and vision becomes blurred through exhaustion of the muscle of accommodation. Then, again, to have both eyes converge at a given point it is absolutely necessary to have true muscle balance. If there should be exophoria—weakness of the internal muscle—one eye will wander out and binocular vision be lost, and in consequence the measuring distance will be interfered with; and it is unnecessary for me to mention that the blocking will be a failure. In point of fact, any muscle defect will bring on irritation, which sooner or later will cause gold-blindness.

The general condition of the patient may also be a causation of the disease. When the metabolism of the body is interfered with the muscular tone of all the active muscles is lowered, especially the muscles of the eyeball and the muscle of accommodation. Therefore tobacco and alcohol should be cut off, and such laws lived up to as will reestablish the tonicity of all the muscles. Great care should be exercised not to cause overaction in any form, for this sooner or later affects the retina. I firmly believe that the man or woman who leads a sedentary life should not be a meat-eater; he

or she should live upon a diet that will eliminate the formation of uric acid. Many retinal troubles are caused by the uric acid diathesis. The dentist who is hard worked should drink water and take long walks. I know of no better way to preserve the health than to play golf; it is a game which makes a long walk interesting, and gives both arms and legs enough exercise without hardening the muscles of the arms. As a layman I say a dental surgeon should encourage and maintain a gentle touch.

To those who are surrounded by blank walls, let their efforts be put forth in trying to decorate these walls with some colored pastoral scene. All can get a picture representing green fields, or a country lane with trees on either side, and I am sure none will regret doing so. Nothing gives the eye greater relief than a green disk or square of sufficient size suspended on a direct line of vision at or against the wall on which the eyes rest; but it is best of all if one can look through the window upon a green grass-plot or green trees. Whenever one can raise the eyes and look at long distances, he will be taking the strain off those little muscles which are so nicely adjusted and yet so easily injured; and more than simply resting the muscles of accommodation, the retina will also be rested.

Always carry the head in the erect position, and as it is exhausting to stand constantly, change the position as much as possible. Let him who bends forward see that the clothing is made loosely. Avoid tight neckwear, such as collars which are too small or shirt-bands or neckties tightly drawn; all these impede the flow of the downward column of blood toward the heart. Such retardation dams up the blood in the capillary bloodvessels of the head and eyes, and the heart driving against this column of blood with sledge-hammer blows is sure to cause dilatation of the vessels and the development of certain diseases or functional disturbances. Almost certain consequences are fullness of the head, headaches, or dizziness. Pay special attention to the hygiene of the body, for that which tends to promote the general health acts beneficially upon the eye. Avoid the use of stimulants and drugs which affect the nervous system. Avoid reading when lying down, or when mentally and physically exhausted. See that no error of refraction exists; have the vision scientifically examined.

For years I have systematically prescribed a slightly colored glass

of arundel or violet color. These glasses have been a boon to the gold-blind. Violet modifies the excess of yellow rays reflected from gold, and makes a soothing glass for retina. The pink or pale violet is the outgrowth of the chemist's art, and we can obtain any degree of color necessary for each case.—*Cosmos, Feb. 1901.*

* * *

IS THE DENTAL PULP NECESSARY IN THE TEETH OF THE ADULT? By James G. Palmer, D.D.S., New York. In the abstract possibly not. Some go even to the extent of saying that it is advantageous to remove the pulp, after a certain indefinite period in life, dispensing with it entirely. That which may be advantageous for some special cases does not seem to the writer to be indicated as a general practice. The pulp has a definite function to perform. Is a period in human existence reached when it is not merely unnecessary, but actually useless, or perhaps even a menace? Evidently some think so, if their utterances have been understood. What is this period of adult life when the pulp is no longer necessary? How is the time to be determined, if indeed it can be? The condition of the pulps in the teeth of one individual at, say forty years of age, is entirely different from that of another individual of the same age. Perhaps, in time the use of the X-ray will be a sure guide, but not at present. There is no question but that we are groping in the dark to a very great extent.

Indications for Pulp Removal.—No one denies that there are occasions when devitalization of the pulp in sound teeth, sound so far as caries is concerned, is advisable. That is not always confined to adult life, however. Even in the teeth of quite young patients there may arise occasions for such devitalization. In the teeth of the adult there may be sensitiveness, and conditions of disease which can be more successfully combated if the pulp be removed.

In cases of extreme sensitiveness when the gum has receded considerably, which do not yield to antacid treatment, nor to applications of cocain, carbolic acid and zinc chlorid, very often removal of pulp gives not merely immediate and complete relief from pain, but actually prolongs the usefulness of tooth. One reason is especially prominent. The average patient does not brush, nor cleanse such sensitive teeth thoroughly; it hurts too much. When the tooth is free from pain the cleansing is much more thorough and, of necessity, the life of the tooth is prolonged.

In conditions of disease—pyorrhea alveolaris—the testimony of those who are looked upon as authorities is distinctly in favor of removal of the pulp in every case. My own limited experience in the treatment of such disease is in favor of the removal of the pulp. Sometimes there seems to be an increased sensitiveness in such diseased teeth, interfering largely with local treatment, which is remedied by the removal of the pulp. There may be other good reasons for devitalization even in sound teeth, but these two appeal to me most and will suffice for the argument.

Arguments Against Pulp Removal.—As opposed to the general removal of the pulp in adult life—it does not prevent decay. A dead tooth is not so strong as a live one. The lines of cleavage are more marked, and if there is an extra leverage upon the tooth it is liable to fracture, to crumble away, as a live tooth will rarely do. There is a certain network of strength—call it reticulum or what you will—which binds the entire tooth together. It is a bond of union as well as of sympathy. That this is continually replenished with life-giving energies by the pulp seems to me to be beyond question. While the tooth is undoubtedly nourished by and through the pericementum, that is not sufficient for the entire tooth, else the friability referred to would not occur. The Almighty placed the pulp in a tooth for a specific purpose. Does that specific purpose end with some certain period more or less indefinite in human existence? I do not believe it.

The deciduous tooth is absorbed; the alveolus is absorbed; the pulp recedes; but does it as a rule become obliterated? When the occlusion is good; when the grinding surface has not worn away; does not the pulp, after a certain age, remain almost *in statu quo?* Is it not in those cases where there has been much abrasion and undue strain that anything approaching obliteration is found? Those who view this matter from a purely theoretical standpoint may say otherwise, but my experience at the chair confirms this statement.

In the six anterior teeth, to the average dentist there should be little difficulty in removing the pulp, thoroughly sterilizing and filling the canal; but in all the other teeth, bicuspids and molars, where fine tortuous canals are found, the possibility of trouble is greatly enhanced, for the average dentist is not sure in every case, and therein lies a great objection to indiscriminate removal of pulp.

This is neither the time nor place to discuss how to remove the pulp nor how to fill the canals. It is a certainty that at present methods are so dissimilar and success often such a mooted question, that other results than absolute and continued comfort are obtained, despite the best and most conscientious endeavor of the individual operator. We must in all cases be as positive of entire removal and absolute sterility and complete stoppage as we are positive of other things, before we can consider the work a success. We must have more light on this subject—the condition of the tooth after it is devitalized—than we have at present.

Besides the possible difficulties arising from incomplete removal of the pulp, the discoloration of the teeth when the pulp has been removed, which I do not believe can always be obviated, is to be taken into consideration. I am assuming that some of the gentlemen who have been outspoken on this matter intended to create the impression that they believe in the indiscriminate removal of the pulp in adult life without regard to surroundings. Possibly the indiscriminate removal of pulp may be performed with less damage when all practitioners have been trained to far more delicate work than the majority of us are capable of at present, and will not make the mistake of destroying pulp after pulp when looking for some disturbance in the teeth which has an obscure origin. Just at present, however, I do not like this removal of the pulp upon the slightest provocation, and I do most emphatically believe that the dental pulp *is* necessary to the well-being of the teeth of the adult, except in rare cases.—*Items, March, 1901.*

* * *

PULP NECESSARY IN THE TEETH OF THE ADULT.—By R. R. Andrews, A.M., D.D.S., Cambridge, Mass. The question "Is the Dental Pulp Necessary in the Teeth of the Adult?" is somewhat unique to any one who has given serious attention to the histological study of the human dentin, and yet the question is not a recent one; it has been discussed before. The wonderful network of anastomosing fibrils found in the dentin and pulp, which is their source of nervous and vascular supply, certainly seems to me to be there for a permanent and vital purpose. Has there ever been sufficient accumulated data to prove that the abnormal condition this question infers—that is, a set of teeth with extirpated pulps—is as desirable as a set of teeth with healthy living pulps? In other

words, are thirty-two pulpless teeth as functionally normal as thirty-two teeth would be in which the pulps were alive and healthy? If so, we must infer that the living tissue in the tooth with its pulp plays no important part in the health, beauty and preservation of the adult organs. Now it is a matter of fact, known to all of us, that the dental pulp with its network of living tissue *does* play a very important part concerning their health, beauty and preservation; and resists in a measure, by reason of its vital action, the inroads of infection.

Vital Resistance of Dentin.—I have found evidences that the dentin possesses the power of making the effort to protect itself from wear and infection not only in the teeth of the young, but on the grinding surfaces of the teeth of the aged, where the surfaces have been worn sometimes beyond the line of the original pulp cavity. This resistant action is one important point which should make the dental pulp seem necessary in the teeth of the adult. For as life advances the grinding surfaces are sometimes worn away to the level of the gum, yet these teeth rarely decay. The surface which has undergone the change is darker in color than normal dentin, and by some may be taken for decay, but so far from being affected in this way, it is no longer liable to decay except under unfavorable circumstances. A tooth in this condition usually remains free from decay during life.

In making sections of these teeth, and studying them under the microscope, I have found that the canals opening upon the abraded surface are filled with small, bright, glistening, globular bodies, which have the appearance of being calco-spherites of lime. On the surface nearest exposure the canals seem wholly closed by this substance. Some investigators think that these never calcify; that they are but fat globules, caused by the breaking down of the dental fibrils. But whatever they are, they certainly are there and they do preserve the teeth from further decay. We find the same appearance in teeth that are eroded. It is my experience that most of the teeth of healthy, robust persons retain their pulps in a healthy, active and vascular condition throughout life—and it was meant that they should. Secondary dentin is sometimes formed by the pulp as a protection, when it is irritated by fracture of the tooth or by thinning of the walls of pulp cavity through excessive wear. There can be but little doubt that the pulp reacts and struggles

against the invasion of infecting organisms, renders the progress of infection slower, and in favorable cases arrests decay altogether.

We must admit that there are thousands of pulpless, treated teeth that are doing excellent service. We must also admit that there are hundreds, equally as carefully treated, that have failed. Under certain pathological conditions, when the pulp is approached by invasion of organisms, when there are tissue lesions antagonistic to the health of the pericemental tissue, the extirpation of pulp is the only proper practice to employ. In many cases it is not employed so often as it should be. It is even proper to destroy the pulp of a healthy, live tooth under certain conditions. But can any one rightfully assert that this pulpless tooth, filled with the best possible care, is in every way equally as perfect as its wholly living and healthy mate? A wise provision of nature has supplied living fibrils from the pericemental membrane to and into the cementum, and when the work of extirpation of the pulp and its subsequent treatment and filling is rightfully performed the operation, because of its living structure, may be eminently successful, and such a tooth may last for years. But in this tooth the main mass of organic structure is dead and but partly removed, and the tooth is thus liable to become opaque and discolored; the absence of a nourishing fluid and the breaking up the fibrilæ probably account for this. There can be little attempt by the limited life the tooth still has to resist the inroads of infection or to give it normal color. Then, when the general vitality is lowered by constitutional disturbances and the secretions become perverted, these pulpless teeth are usually the first to give pericemental trouble and to break down. This condition is in part due to methods in vogue for devitalizing the dental pulp by cauterizing and tissue-destroying pastes and drugs, which sometimes continue their deleterious effect beyond the apical foramen.

Many operators think the use of arsenious acid for devitalizing the pulp is sure sooner or later to cause pericemental trouble. We must admit that this trouble takes place in many cases where we think we have given careful attention to every detail. This condition could be minimized by a strictly surgical removal, under the influence of some such obtundent as cocain. It is wholly impossible to tell from any microscopical appearances just when the tooth pulp and the dentinal fibers have ended their functional activity; it

is a question whether they ever do in healthy teeth. Adult life may end this action in cases of lowered vitality, but it is equally certain that it is active in vigorous and healthy old age; there are many evidences of it.

Believing as I do that a live healthy tooth is better than a pulpless one, no matter how carefully filled, and in the light of what evidence I have given you, strengthened by years of histological investigation, I must assert that the dentinal pulp is necessary for the best possible conditions of the teeth in adult life; and that we should strive to so conduct our practice that there should be the least possible need for its death and extirpation.—*Items, March, 1901.*

* * *

VALUE OF THE DENTAL PULP IN ADULT LIFE. By J. Leon Williams, D.D.S., L.D.S., London. I must conclude that the title of Dr. Palmer's paper, "Is the Dental Pulp a Necessity in Adult Life?" does not quite correctly convey the desire you have in mind as to the facts and opinions you wish to draw out in the discussion. The many thousands of pulpless teeth which have been doing their possessors good service for five, ten or even fifteen years give at once a vast, accumulated proof that the pulp is not a necessity. But I apprehend that what you really wish to determine is the relation or, if possible, the exact value of the pulp in adult life, and this is a very interesting subject for discussion.

Function of the Dental Pulp.—The pulp, as you are all aware, is primarily the formative organ of the dentin, and after its work as a formative organ is completed, it remains as the nutritive organ of this tissue. Now, the value of a nutrient supply is in direct proportion to the rapidity of all those physico-chemical integrating and disintegrating processes, which we group under the general term "nutrition." Mass and molecular movement, as exhibited in the muscular and nervous systems, is the one chief characteristic of life, and these movements, resulting as they do in rapid waste, demand a rapid and free nutrient supply. But the teeth, being mere passive organs of resistance for the purpose of mastication, have need for only so much nutrition as is necessary to maintain a healthy relation to the organism of which they are a part. Muscles and nerves must have free and rapid nutrition in order to perform their proper and essential functions.

It is perfectly safe to say that the principal tissues of the teeth,

the enamel and the dentin, need no nutrient supply in order to perfectly perform their essential functions, and it is practically certain that no physiological changes take place in enamel, even in teeth containing healthy pulps. If it takes five years to effect a complete change in the structure of bone of average density, it must require fifty years to completely renew the structure of dentin. Nutrition of this sort dwindles to the vanishing point of importance. The best possible proof of the non-importance of the dental pulp in adult life is found in the ever present tendency to obliteration by calcification with advancing years.

But from the practical point of view there are important reasons why it is desirable to maintain a healthy pulp in a tooth. It is necessary to the perfect color of the tooth, and it keeps the latter free from the danger of periosteal inflammation at the root end. The great practical problem is therefore one involving knowledge and judgment as to when an effort should be made to maintain the pulp alive, or as to when it is wise to remove it. For keep always in mind the important fact that the considerations which lead us to an attempt to maintain a living pulp in a tooth, when we are reasonably certain that our efforts will be successful, become reasons for the removal of a pulp if we are in doubt as to the success of our efforts. My own opinion is that at present far too many efforts are made, among the most skilful dentists, for the preservation of the pulp, with the inevitable result that eventually the very conditions are brought about by the death of the pulp which they sought to prevent in their efforts to keep it alive.

When to Extirpate the Pulp.—The removal of a pulp, concerning the continued health of which we have any doubt, prior to the death and decomposition of that pulp, is in my judgment a far wiser practice than an effort to keep it alive. My reason for the above statement is, that if the pulp be removed before its complete death and decomposition, and the pulp-canal be properly treated and filled, we are reasonably certain that the tooth thus treated will continue a serviceable organ for many years, whereas if the pulp be allowed to die and decompose, this dead, septic material, some portion of which is almost certain to remain in the dental canaliculi, and in the extreme end of the root beyond our power to effect complete removal, greatly endangers the future prospects of the tooth.

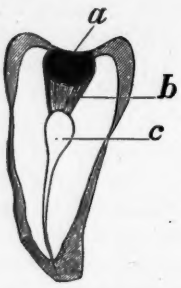
The question then becomes one of knowledge and judgment as to

when the pulp should be removed or an effort made to preserve it alive. As my experience gets riper I find myself less and less inclined to attempt to save a pulp if it has become the seat of inflammation. A certain proportion of pulps which have been inflamed are, if carefully treated, no doubt saved alive for longer or shorter periods, but I am convinced that there is a large balance of benefit to our patients in that method of practice which takes none or the fewest possible chances.

Advantages of Pulp Removal.—There is another phase of this subject which should receive careful and thorough investigation. I refer to the possibility of very beneficial results growing out of the removal of the pulp in cases of loosening of the teeth from advancing destruction of the investing membrane from whatever cause or causes. More than twenty years ago, I pointed out the probability of an increased blood supply to the pericementum being one of the results of the removal of the pulp. Some of you will no doubt remember several photographic illustrations which I published in *Items* a few years ago, in which I showed that both nerves and blood-vessels from the same trunk entered the pulp and the pericementum. This fact confirmed my earlier opinion, and more recently Dr. Rhein has claimed valuable practical results from the removal of pulps in loosening teeth.

Danger From Infected Dentin.—In conclusion let me call your attention to one more phase of this subject to which very little attention has been given. I believe the most dangerous class of cases of dental decay which we treat, especially with reference to the saving or destruction of the pulp, is not that in which there has been irritation and inflammation of the pulp, but where these conditions are absent although there is but a thin layer of dentin over the pulp. This thin layer may even seem to be comparatively hard and resistant to our cutting instruments, but probably in every instance it is the seat of bacterial infection, and after the filling of tooth this infection is extended to and involves the pulp and in a far larger number of cases than is commonly supposed leads to death of the pulp. Probably a large proportion of the cases of death of the pulp, which are usually attributed to thermal shock, are caused by bacterial infection. Arkovy is the only investigator, so far as I know, who has done any systematic work on this point. He claims to have discovered and isolated and has named a microorganism to

which he attributes gangrene and death of the pulp. He further claims that this organism possesses the power of penetrating a very considerable thickness of dentin.



An interesting case in practice, which represents a class of cases not uncommon, bearing on the points under consideration, has recently occurred in my own practice. A lady, in fairly good health, called to consult me about severe pain of a neuralgic character in the right side of the face and head from which she had been suffering severely for several days. The pain seemed to be felt throughout the entire region of the distribution of the fifth pair of nerves on the right side. None of the teeth was sensitive to percussion and not especially so to heat or cold. There was some feeling of heat and considerable swelling in the region of the parotid gland. By very careful attention the patient seemed able to determine that the more severe attacks of pain especially flashed about the posterior part of the right upper jaw. This tended to confirm my opinion that the trouble had its origin in the right upper third molar, which contained a small crown filling that had been in place several years. I diagnosed a dead or dying pulp and suggested removal of the filling and opening the pulp cavity, but the patient had lost several nights' sleep and was not disposed to delay any treatment which offered hope of immediate relief. The tooth was extracted and split open, and the condition revealed can best be explained by aid of the accompanying sketch. A represents the amalgam filling, which perfectly filled a cavity that penetrated hardly more than half the distance from the grinding surface to the pulp-chamber. There was no marked softening of the dentin beneath the filling, but a well marked area, B, shaped like a section

of a cone, passed from the bottom of cavity to C the pulp-chamber. I have not yet had time to examine this particular case microscopically, but I have examined many similar ones, and there is no doubt but that this area shown at B represents enlargement of the dentinal tubuli by the action of microorganisms. These had doubtless penetrated the dentin and infected and destroyed the pulp. The pulp was not completely disorganized, but presented a jelly-like, almost colorless mass floating in a thin fluid and giving off an offensive odor. There is nothing especially unique about the clinical aspects of the case, and I have described them to call attention to what is doubtless the cause of the trouble, bacterial infection. This had even penetrated to parotid gland, causing heat and swelling. I believe the idea that these more or less familiar cases present phenomena resulting from bacterial infection is not very extensively entertained by the profession as a whole.—*Items, March, 1901.*

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GRIP ODONTO-METASTASIS. By W. A. Mills, D.D.S., Baltimore. Read before Baltimore County Medical Society, Jan. 17, 1901. Of all the atypic diseases, grip is the most typic. Its exact pathology is not yet definitely settled, but sufficient has been learned to show that the Pfeiffer bacillus, in conjunction with atmospheric and climatic changes, plays the most important *rôle* in its etiology. It is supposed that the germ enters directly into the blood-current, as the whole nervous system becomes unbalanced from the beginning of the attack, owing to impoverishment of the blood. Dr. Moreman says, "This anemia is not due so much to the death of the red blood-corpuscles as to the diminished production—for a microscopic examination of the blood shows that the number to the cubic millimeter is less than normal—and to the increase of leucocytes."

This zymotic hydra is of such a metastatic nature that when the general practitioner diagnoses a case he may have not only one evil to combat, but many complex conditions. Under his treatment it may develop into a simple influenza, or assume a more serious character, like pericarditis, endocarditis, nephritis, pneumonia, rheumatism, etc. Should the patient survive, often there are other more or less serious disturbances as sequelæ. In this paper your attention is called to some dental complications caused by this malady. The following four cases are cited to show some of their characteristics:

Case I.—Mrs. S., aged twenty, of nervo-bilio-sanguineous temperament, complained of a deep-seated pain in the left side of her head and face, which seemed to spring from an upper left bicuspid tooth, the distress at times being so great as to preclude sleep. The trouble had begun two weeks previously, while being treated by her physician for grip. He prescribed all the usual remedies, but failed to give relief. On examination the tooth supposed to be the cause was found to be in a normal condition; was not sensitive to touch, heat, cold or percussion, nor did the epithelium of the gum-tissues indicate any pathologic changes. In the tooth was a small filling, which in no manner could have caused the pain. The tissues on both sides of the tooth were painted with the tinctures aconite and iodin, and, as an analgesic, acetanilid, caffein and soda were given. The next day she said the pain was so intense that the tooth must be extracted or she would go mad. Her request was refused, and believing that the trouble might be induced by deposit of calcium salts in the pulp, it was devitalized, removed, and the dental canal filled. A few days later she said that some relief had been given, but occasionally a pain would shoot out, seemingly from the apex of the tooth. Later on she said that the corresponding tooth on the opposite side of the jaw had been giving her pain similar to the one treated. Tic douloureux pains continued more or less until she had fully recovered from the grip.

Case II.—Mrs. M., aged forty-one, of nervo-bilio sanguineous temperament, was under treatment by her physician for grip when she was seized with an agonizing pain simulating neuralgia in two upper bicuspid teeth; the pain increased as night came on. This condition continued for days. Neurotic remedies having failed to give relief, the doctor had to prescribe hypnotics to give her any rest. The pain continued with more or less intermission until she was able to leave the house, when she visited a dental practitioner in her neighborhood. On examination he could find nothing to cause the trouble, but the irritation was so persistent that he concluded to devitalize both the pulps, which he afterward removed and then filled the canals. So little relief was given by the operation that she called on us for advice. The case was diagnosed as a reflex of grip. Painted the gum-tissues with tincture aconite and iodin, and referred her back to her medical adviser. A few days later she returned and said the corresponding teeth on the opposite

side had been giving her more or less pain, but the distress was not great enough to cause any loss of sleep. When patient had fully recovered from grip all pains and unpleasant sensations ceased.

Case III—Mrs. H., aged forty-five, of nervo-bilio-sanguineous temperament, complained of uneasy and undefined painful sensations along the line of the upper jaw, occasionally increasing at night-time and causing her to awake from a sound sleep. At times it appeared to be superficial, and at others to radiate from an upper bicuspid tooth. On examination all the teeth were found in a normal condition. The tooth was tested with heat, cold and percussion, with negative results. As patient was suffering at the time with what seemed to be coryza, the case was diagnosed as one of reflex neurosis, caused by the inflamed condition of the upper air-passages. Calomel, quinin and codein were prescribed, and local treatment given with tinctures aconite and iodin, which gave some temporary relief. In a few days she developed a case of grip, which terminated in abscess of the left tonsil. Two weeks later she had a relapse, and came near having an abscess of the right tonsil; during the interval a bicuspid tooth on the same side gave symptoms similar to those of the bicuspid on the left. After recovery all pains of a dental nature ceased.

Case IV.—Mrs. N., aged thirty-one, of nervo-bilio-sanguineous temperament, was suddenly gripped, without any premonition, with acute pain in the lower left bicuspid tooth; she said she had felt as though the tooth would jump out of the top of her head. On examination all the tissues of the mouth were found in a normal condition. The tooth complained of was normal in every respect; not a sign of any dental caries, nor had it ever been filled. The case was diagnosed as one of reflex neurosis, due to uterine troubles, for which the patient was being treated by a specialist. Gave constitutional treatment of quinin, calomel and strychnin; local treatment given with tinctures aconite and iodin. The next day pain was so intense that the patient pleaded to have the tooth extracted. This was refused, but painted the tissues around the tooth with crystal carbolic acid; this gave great relief, and patient was dismissed. The next day she said that the tooth was all right, but all the pain had centered in the nape of her neck. A few days later she developed a case of grip, which culminated in serious dual pneumonia.

We have read a great deal in medical and dental literature, hoping to find an account of some similar case to those mentioned, but the field is barren. The nearest approach to them was found in an article by Dr. W. W. Coon, entitled "Edema of the Antrum of Highmore as a Complication of La Grippe." Speaking of a tooth complained of by one of his patients, he says, "The symptoms were apparent of a commencing alveolar abscess, but I soon found enough of the pulp to prove that the tooth was enjoying good health. No more was done than to relieve the pain constitutionally and observe results. Thus will these cases run their usual course, and I believe many times unrecognized as to the true nature of the cause, being considered neuralgic pain that is necessarily a part of influenza or its sequel." Had Dr. Coon's attention been called to that particular tooth later he would have found its pulp dead, notwithstanding it was living when he examined it, because, with our experience with similar cases, after recovery from grip the pulps in all teeth so affected were found to have died. It was so in cases III and IV, and the same conditions would have developed in cases I and II if the dental pulps had not been surgically removed.

One of the most peculiar features of this lesion is that while the symptoms indicate threatened alveolar abscess, or dying or suppurating pulp, all the usual clinical features are absent, showing that the dyscrasia is of a truly neurotic nature.

The question before us is, What were the agents which produced the conditions, and how did they operate? So far no special toxin of the microorganism of grip has been discovered, but it is well known that one of its chief characteristics is a lessening of the number of red blood-corpuscles, thereby inducing a sub-alkalinity of the blood and a consequent greater or less degree of defective metabolic equilibrium. Especially is this trait demonstrated at points of lowered or weakened vitality, or where the germs focus and multiply. This being the case, we presume that the origin of the pain before and after extirpation of the dental pulps was due chiefly to the irritation of the nerve centers and filaments by the poisonous effect of uric acid, deposited by the blood-plasma at or near the apices of the teeth. The devitalization of the dental pulps was caused by an endarteritis, followed by an abnormal multiplication of endothelial cells, which occluded the blood-vessels supplying the pulps. In other words, the pain was produced by the continuous low inflam-

mation of the involved nerve-tissues, and the necrosis of the dental pulps was the effect of shutting off the nutrient supplies.

Dr. Moreman says, "Neuralgia and grip seem to be synonymous terms, hemicrania, tic douloureux, and facial neuralgia in any form being an inflammation of the nerves; naturally a tooth-bulb or pulp supplied by a nerve ravaged by inflammation would die." Of late we have been treating similar cases with antilithic remedies with much success, which fact has convinced us more than ever that our hypothesis is to some extent correct. Dr. Lemmer says, "Many diseases and a multitude of symptoms of heretofore unknown pathology and speculative causation are now recognized as occurring only under the condition of excessive uric acidity, and the major harm from uric acid seems to rest on its peculiar power of disturbing the peripheral arterial supply."—*Cosmos, March, 1901.*

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GERMAN DENTAL MISCELLANY. Translated for the DIGEST by Dr. B. J. Cigrand, Chicago. THE INTERNATIONAL CONGRESS. The International Dental Congress made the following provisions:—1. The proceedings shall be issued in three volumes, to contain about 1,800 pages. They shall have the papers as read, the debates and discussions, illustrations, proceedings, minutes of the sessions, etc. 2. The executive committee shall publish in the various dental journals, and announce to the different dental schools and great libraries, that the cost of these three volumes will be $9.00. 3. Advertisers are hereby notified that space in the proceedings will be sold as follows: Full page, $25.00; one-half page, $15.00. The advertisements will not exceed more than sixteen pages per volume. 4. This will give a complete compendium of dental science for 1900. Those wishing to subscribe will kindly send the money at once to Dr. E. Sauvez, 17 Rue de Petersburg, Paris.—*Wiener Zahnarztliche Monatsschrift.*

BUDAPEST UNIVERSITY REPORT. Prof. Arkovy makes the following interesting report concerning the dental department of above university: The number of patients in the infirmary during the past six months was 2,846, as follows: Boys under fourteen, 190: girls, 271; women, 1,472; men, 913. There were 2,254 extractions, because of pulpitis, 939; pyorrhea, 875; fracture, 33; irregular, 11; hopeless, 37; ulcerations, 115; deciduous teeth, 251. During the previous six months the total number of patients was 3,512, and the

extractions, 3,174, both divided about as above. During the first period there were 592 who received operative and prosthetic attention, and 338 during the last.—*Vierteljahrsschrift Zahnheilkunde.*

IRIDIO-PLATINUM FOR CLASPS. Dr. Pinsot recommends platinum with which is incorporated 30 per cent of iridium as an excellent metal for clasps. He claims that 18 k. gold when used as clasp metal injures the teeth, since galvanic action is invariably established, which in turn inaugurates caries. No gold lower than 22 k. should be used. Heavy gauge aluminum makes good clasps.

PULP EXTIRPATION. The pulp can be painlessly removed by saturating a small piece of sponge with one part formalin and four parts alcohol, adding a crystal of cocain and applying immediately over pulp. Press it tightly against the tissue with a small piece of rubber, and the pulp will soon be completely anesthetized.

VULCANITE REMOVED FROM FILES. When files are clogged with vulcanite, place them in a solution of one part saltpeter, three parts sulphuric acid and one part water. Then brush them with a stiff brush, adding sufficient soap. This process not only removes all the vulcanite but sharpens the files as well.

WHY GOLD CROWNS FAIL. When a gold crown is set over a large amalgam filling and a small amount of cement is used, and the saliva is in an acid condition, the galvanic action between gold and amalgam destroys the virtue of the cement, making it lose its adhesive power, so that the crown is easily loosened and pulled away.—*Zahntechnische Reform.*

* * *

DENTAL CYST ARISING FROM THE ROOT OF A LIVING TOOTH. By Mr. E. B. Dowsett. Read before Odontological Society of Great Britain. The patient, a woman aged 32, gave the following history: Eleven months previously she had pain in the left side of lower jaw, and the bone began to swell from that time in the region of the second bicuspid tooth, and gradually increased in size. Patient never had any acute symptoms. When seen and examined there was a hard, uniform swelling of the lower jaw, expanding the outer plate of the mandible and filling up the buccal sulcus from the second molar behind to the first bicuspid in front. There was no eggshell crackling over any part nor any softened area. The second bicuspid was very much tilted, so as to be lying along the alveolus, with its crown pointing *forwards*, and patient states that it was not

always in this position. The first molar was missing, having been extracted fifteen years previously. Both the bicuspids and second molar were living teeth, giving the ordinary reaction to a hot burnisher. A skiagraph showed absence of any buried roots of the first molar, from which a dental cyst might be arising, and also absence or any non-erupted supernumerary which might have been causing a dentigerous cyst. A dental cyst arising from the second bicuspid was therefore diagnosed.

Subsequently the patient was anesthetized and this tooth removed. The shallow socket was found to be in direct continuity with the cyst cavity. Some of the alveolus and a large piece of the outer wall were cut away. The rest of the cyst was scraped and packed in the ordinary way. The cavity was completely healed up in six months. The cyst contained a yellow fluid with abundance of cholestrin crystals. Microscopical examination of the cyst wall showed it to be *epithelial*. The tooth showed a well-marked flattened facet on the side of the root directed downwards from which the cyst arose, the facet apparently being formed by absorption and disposition of cementum.

The point of great interest is the fact of the tooth being *alive* when the cyst arose. In all written accounts of dental cysts, it is *invariably* stated that they arise from the roots of dead teeth, and that they are stimulated to growth by some chemical or bacterial irritant passing by the apical foramen; but no such stimulant could have been present here. Its probable pathology seems to be a cyst originating from one of the epithelial remnants, so commonly found microscopically in the alveolo-dental membrane, and not stimulated to activity by some irritant from the pulp canal, but arising as a new growth quite spontaneously.—*Brit. Jour. D. Sc., March, 1901.*

NASAL OBSTRUCTION; MOUTH BREATHING; CATARRH; DILATORS.—By Dr. N. B. Jenkins. Many non-discharging obstructions may be treated with constant pressure. This is best effected by the use of folded writing-paper dilators, in size about one-half inch by two or three inches. For mouth-breathing during night the author recommends the use of a bridle, as a reminder to the patient, rather than as a means of locking the jaws. He points out, however, that in many mouth-breathers the muscles which hold the jaws closed may become atonic and may need the assistance of the bridle in overcoming the habit. To hygienic measures, without other treatment, many stubborn cases of hypertrophic rhinitis, middle-ear catarrh, amygdalitis, "bad colds," and arrested development may yield.—*Med. News.*

Letters.

NEW YORK LETTER.

NEW YORK, April 11, 1901.

To the Editor of the Digest,

MR. EDITOR:—The Rev. Thos. Douglas read a paper recently before the Presbyterian Ministers' Association, in which he branded Mrs. Eddy, of Christian Science notoriety, as a self-constituted saint. Speaking of that cult he said, "They claim to heal decayed bone, but Mrs. Eddy wears a set of false teeth furnished by Dr. Fletcher of New Hampshire, and Mrs. Lathrop has a beautiful set furnished by the late Dr. Meiggs of this city."

This Dr. Meiggs was a pupil of Mrs. Lathrop's, and committed suicide in his office. In one of his molars was a gold filling, said to be the largest in weight ever placed in a tooth. The circumstances were as follows: Dr. Marshall Webb once asserted that he could place the dam upon any tooth which needed a filling, and secure absolute exclusion of moisture, so this badly broken-down molar was shown him. He first took an impression and made from the model a special clamp, then placed gutta-percha in and around the cavity so as to press away the gum tissue. At the monthly clinic of the First District Society some days later he filled the tooth before a large number of interested onlookers, and unless we are greatly mistaken, used a trifle over three-eighths of gold. With great skill he so shaped the filling while operating that but little finishing was needed.

Speaking of contour work, the rising generation of dentists probably do not realize that only since 1860 has this practice been emphasized. Drs. Dwinelle and Arthur first brought it out, but Dr. Atkinson was the strongest champion of it, and marked a new era by demanding that fillings should be so formed as to knuckle stiffly against each of the approximal surfaces. At first his radical departure of course met with much earnest opposition, but in time the truth of the theory prevailed.

Dr. William Carr on March 12 was presented with a loving-cup by the members of the First District Society, and the presentation was happily made by Dr. S. G. Perry. We are sorry to say that

Dr. Carr soon goes to Europe for a long trip, hoping to relieve a severe bronchial difficulty. May he soon recover, and may his cup of joy be full to overflowing.

At the March meeting of the Odontological Society Dr. G. Alden Mills read a paper on "Dental Caries a Disease." Those who heard it were not wholly sure whether it is or not. The author did not prove it, but nevertheless firmly believes that caries will ultimately be proven a disease.

Dr. Henry, well known to Brooklyn dentists, died last month from appendicitis, after refusing an operation.

Mrs. Kennedy, wife of the dentist who is on trial for the murder of Dolly Reynolds, has appealed to the New York societies on behalf of her unfortunate husband, but it does not seem as if they could do any good in the matter. At his second trial, held recently, the jury failed to agree and was discharged, so that it is possible Dr. Kennedy will be admitted to bail and the case will never be heard of again. The spirit of American fair play does not approve of trying a man three times for the same offense.

Our dentists are now looking for new quarters as the first of May approaches. There is considerable demand for property located favorably for bachelor apartments and family hotels. Bachelors seem to be largely a New York commodity, and there is a goodly proportion among the profession here. "It is not good for man to live alone." This is said on good authority.

The Second District Society held a long but interesting meeting last month, which was attended by several other local societies. The subject up for discussion was "Extension for Prevention," and papers were read from Drs. Johnson and Black of Chicago, Wedelstadt of St. Paul, Perry and Rhein of New York, Darby and Trueman of Philadelphia, and Smith from Baltimore. When midnight came the discussion was still going on, so the meeting was adjourned that those in attendance might benefit by the excellent supper provided by the entertaining society. Cordially, NEW YORK.

IMPROVEMENT IN CELLULOID CASTS. Hersing.—When celluloid is softened in acetone, as usual, it requires several hours to harden. Hersing has discovered that if the strips of celluloid are dipped in hot alcohol they become so soft in two or three minutes that they can be applied at once, while in fifteen minutes they are as stiff again as before they were immersed in the alcohol.—*Jour. A. M. A.*

The Dental Digest.

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Editorial.

HOW CAN SOCIETY WORK BE IMPROVED?

A grave problem confronts the older and more earnest members of the dental profession, namely, how to make society meetings more attractive, so that the young men will be drawn into the work at once, and the stay-at-homes will be in the minority instead of in the majority as at present. When it is considered that only about one-fifth of the entire dental profession belongs to any society, and that the interest in this work is not increasing, if indeed it is not waning, all must admit that some radical action is necessary. After an experience in and careful study of society work during the past thirty odd years, we feel warranted in making some criticisms and offering some suggestions.

The first criticism is, that the meetings are not well advertised, and many who might come stay away because they are not aware of the time and place of convention, or are not personally solicited to attend. This brings up the second point, which is, that officers in a society are usually selected because they are "good fellows" or because they have been "members for many years," or to satisfy some real or fancied obligation. Their fitness for the various offices in most cases is never considered. This matters little except in the case of president and chairman of the executive committee. These two officers, however, should be chosen simply and solely because they are fit for the work in hand. A live man on the executive committee can almost double the attendance at any society meeting, and it lies within the power of the president to make a success or failure of the sessions after the body has convened.

This brings us to the third criticism, namely, that most presiding officers are neither familiar with their duties nor capable of carrying them out. One duty of the president, and probably the most important, is to keep discussions confined to the papers in hand and not allow the speakers to wander from the subject. It may seem a

little hard at first to call one man after another to order, but something must be done to obviate the long-winded and tedious discussions which now occupy the greater part of society meetings. The sessions should not develop into a "mutual admiration society," and all complimenting of the essayist and reiteration of the points he has brought out is simply a waste of time, as it adds nothing to the value of the discussion. To show to what extremes this can be carried, we would state that once in revising the proceedings of a large state society it was found that out of one hundred and fifty pages of papers, discussions, motions, proceedings, etc., one man, who fortunately did not read a paper, occupied twenty-five pages, or one-sixth of the total, with simply his discussion, most of it utterly irrelevant to the subjects in hand. Two or three individuals like that would kill the best society on earth, and the presiding officer must hold them in check.

Our fourth suggestion is, that the program committee select as essayists only those who are familiar with certain subjects, or who can by study present something of value, or who are willing to make original investigations along some line. Judging from too large a number of the papers read, the essayists have been selected utterly at random, and have not started to write the paper until a few days, or even hours before the meeting, and have finished it en route. This is, to say the least, showing scant courtesy to the society and to the members thereof, who have come expecting to hear something of value. Authors should pledge themselves to devote a sufficient amount of time to their productions to insure something of benefit, and if they are not willing to do this they should abdicate in favor of some one more energetic. Following out this plan would obviate the evil spoken of above, which we regard as one of the most serious detriments to interesting and profitable society work. We refer to the rambling discussions. Those taking part are not one-half so much to blame as the authors who have not finished their papers in time to furnish duplicate copies at least a few days before the meeting. We believe the program committee should select two or three men to discuss each paper, picking them with the same care as they do the essayists, and the latter should further pledge that they would send copies of their papers to these men at least two weeks before the society convenes.

There are of course other features of this question which might

be taken up, but we believe the observance of these few criticisms and suggestions would do much to make society meetings better, more profitable and more inspiring, and this must be accomplished in some way if the profession is to continue to advance.

SLAVES TO PRECEDENT.

Men as a rule are slaves to precedent, and nothing is easier than to get into a rut, which usually grows ever narrower. As illustrating the disposition of human nature to move along the lines of least resistance, by the paths that others have trod, and to indulge in as little independent thinking as possible, we quote, with apologies to our friends at the Hub, a few lines by S. Walter Foss, entitled, "The Calf-Path."

"One day through the primeval wood a calf walked home, as good calves should, but made a trail all bent askew, a crooked trail, as all calves do. Since then two hundred years have fled, and I infer the calf is dead. But still he left behind his trail, and thereby hangs my moral tale. The trail was taken up next day by a lone dog that passed that way; and then, a wise bell-wether sheep, pursued the trail o'er vale and steep, and drew the flock behind him too, as good bell-wethers always do.

"And from that day o'er hill and glade, through those old woods a path was made; and many men wound in and out, and dodged and turned and bent about. And uttered words of righteous wrath because 'twas such a crooked path. But still they followed—do not laugh—the first migrations of that calf, and through this winding woodway stalked, because he wabbled when he walked. This forest path became a lane, that bent and turned and turned again; this crooked lane became a road, where many a poor horse with his load, toiled on beneath the burning sun, and traveled some three miles in one. And thus a century and a half they trod the footsteps of that calf.

"The years passed on in swiftness fleet, the road became a village street; and this, before men were aware, a city's crowded thoroughfare; and soon the central street was this of a renowned metropolis. And men two centuries and a half trod in the footsteps of that calf. Each day a hundred thousand rout followed the zigzag calf about, and o'er his crooked journey went, the traffic of a continent. A hundred thousand men were led by one calf near three centuries dead. They followed still his crooked way and lost one hundred years a day; for such a reverence is lent to well established precedent.

"A moral lesson this might teach, were I ordained and called to preach; for men are prone to go it blind, along the calf-paths of the

mind, and work away from sun to sun to do what other men have done. They follow in the beaten track, and out and in, and forth and back, and still their devious course pursue, to keep the path that others do. But how the wise old wood-gods laugh, who saw the first primeval calf. Ah! many things this tale might teach, but I am not ordained to preach."

Considering the three great learned professions—Theology treats of past traditions, and in the church it has ever been the custom to bow the head abjectly at the mandates of former prelates. Law offers no opportunity or incentive to reach out for fresh fields to conquer, as lawyers and judges are ruled almost absolutely by precedent. It is claimed that law is the crystallization of equity and common sense, but the fact is that our courts are governed by past rulings, and when pleading a case lawyers do not appeal to the common sense and fairness of the average justice, but try to influence him by a formidable array of previous judicial decisions. The practice of medicine, however, is an ever-living issue, and presents in all its branches endless opportunities for achievement. What other profession can show so many new thoughts, facts and discoveries as have been evolved by the various classes of medical men during the past few years?

Despite the phenomenal advancement which dentistry has made, arising from a mere trade considerably less than a century ago to one of the most learned professions of the present time, and notwithstanding the unlimited possibilities open to those who will make use of them, dentists too often get into a rut and in a few years are narrowed down. It cannot be denied that the practice of dentistry does not tend to broaden those who follow it, for unlike physicians, dentists do not get out of their offices several hours a day, do not see nearly so many people or even patients in each twenty-four hours, and finally, do not have serious cases on their hands or meet with death frequently, both of which experiences stir a man's strongest emotions and remove from him any possible lethargy. To spend the greater part of the working day looking into some one's mouth or out on a back-yard or blank wall would tend to narrow any man, and to overcome their handicap dentists must embrace every opportunity which will give them a broader view of life. They should read more, write more for their own journals, start independent lines of original investigation, and above all, attend their local and state society meetings. This is the time

of year when the latter organizations are holding their annual conventions, and we hope every one of our readers will think enough of himself and his profession to attend at least his own state meeting. Instead of saying that no benefit is derived from such attendance, offer your services to the work, and try to better existing conditions. Looking at the matter from an entirely selfish standpoint, it is a noteworthy fact that the leading and successful men in our profession are usually active workers in one or more societies, and nothing can so broaden and benefit the dental mind as this interchange of ideas and social commingling.

Notices.

KANSAS STATE DENTAL ASSOCIATION.

This association will meet in Leavenworth at the Planters Hotel May 8-10, 1901, and a full attendance is hoped for. An interesting meeting is assured.

R. MATTHEWS, Pres., Wichita.

SOUTHERN WISCONSIN DENTAL ASSOCIATION.

The seventh annual meeting of this association will be held at Delavan, Wis., May 21-23, 1901. A good program has been provided, and an enjoyable time is assured for all who attend. J. H. REED, Sec'y.

NEBRASKA STATE DENTAL SOCIETY.

The annual meeting of this organization will be held at Omaha May 21-24, 1901, and the profession in this and neighboring states are cordially invited to be in attendance. F. D. SHERWIN, Sec'y, Lincoln.

OKLAHOMA BOARD OF DENTAL EXAMINERS.

This board will meet at Oklahoma City May 7, 1901, at 10 a. m. for the purpose of examining applicants for licenses. Undergraduates must be prepared to do practical work. E. E. KIRKPATRICK, Sec'y, Oklahoma City.

TRI-STATE DENTAL ASSOCIATION.

The Tri-State Dental Association, Illinois, Kansas and Indiana, will meet in Paducah, Ky., May 28-30, 1901. A large attendance is expected and an excellent program has been provided. W. H. BROSMAN, Sec'y, Albion, Ill.

KENTUCKY STATE DENTAL ASSOCIATION.

The annual meeting of this association will be held in Louisville, May 14-16, 1901. The usual hotel and railroad rates will be procured. A cordial invitation is extended to the profession to be with us.

F. I. GARDNER, Sec'y, Louisville.

TEXAS STATE DENTAL ASSOCIATION.

The annual meeting of this society will be held May 14-16, 1901, at Sherman. The date has been changed from the third Tuesday in May as heretofore announced. The profession here and in neighboring states are cordially invited to meet with us.

J. G. FIFE, Sec'y, Dallas.

DISTRICT OF COLUMBIA AND MARYLAND STATE DENTAL SOCIETIES.

The fifth annual meeting of the District of Columbia Dental Society and the Maryland State Dental Association will be held at Baltimore, May 16-18, 1901. Please mark off these dates on your appointment book at once.

B. HOLLY SMITH, Chairman of Joint Committee, Baltimore.

WISCONSIN STATE BOARD OF DENTAL EXAMINERS.

The next annual meeting of this board for examinations will be held at Delavan, Wis., commencing 9 a. m., May 21, and continuing three days. All examinations are conducted in the English language in writing. A practical demonstration is also required, and applicants must furnish their own instruments and patients.

W. H. CARSON, Sec'y, Goldsmith Bldg., Milwaukee.

VERMONT STATE DENTAL SOCIETY.

At the twenty-fifth annual meeting of this society, held at Montpelier, March 20-22, 1901, the following officers were elected for the ensuing year: Pres., C. W. Steele; 1st V.-P., J. A. Pearsons; 2d V.-P., J. H. Jackson; Sec'y, Thos. Mound; Cor. Sec'y, Grace L. Bosworth; Treas., W. H. Munsell; State Prosecutor, J. A. Robinson; Ex. Com., H. Burbridge, R. H. Newton, G. F. Barber. The next meeting will be held at Rutland, the third Wednesday in March, 1902.

GRACE L. BOSWORTH, Sec'y.

ILLINOIS STATE BOARD OF DENTAL EXAMINERS.

The next regular meeting of this board to examine applicants for licenses to practice in this state will be held in Chicago May 2-4, 1901, at the Chicago College of Dental Surgery, Wood and Harrison Sts. Candidates must come provided with the necessary instruments, rubber-dam and gold, to perform practical operations and such other work as is deemed advisable by the board. Those desiring to take the examination should matriculate with the secretary ten days before the meeting. The examination fee is $10.

J. G. REID, Sec'y, Champlain Bldg., Chicago.

A LEGAL NOTICE.

Know all men by these presents, that on the fourth, fifth and sixth days of the sixth month, in the year one thousand nine hundred and some, Annie Dominoes, in the City of Indianapolis, State of Felicity, otherwise known as Indiana, with the Banks of the Wabash not Far Away and several other Banks a good deal closer, there will be held, convened and, as you might say,

congregated, a galaxy or assemblage of practicing dentists, for the purpose of meeting, getting together, and associating themselves in conclave to hear papers and discussions, see clinics and exhibits, and otherwise inform, enlighten, refresh, and amuse themselves, in a just and lawful manner, according to that clause in the Constitution of the United States which insures every citizen of this Republic protection in the pursuit of happiness.

And know all you sane men by these further Christmas presents, that this is the third tertiary, or ternary, joint or amalgamated meeting of the State Societies of Ohio, Michigan and Indiana, which said joint meetings take place or occur every third year, beginning at the commencement, and may be called triennial in their being, as well as triangulate. And, therefore, as the first of these meetings, held at Detroit in 1895, was, is, and will be known as the O! I'm meeting, and the second, held at Put-In-Bay in 1898, was raised, and called the Mi O! meeting, be it hereby and hereon ordained, specified, ordered, and otherwise understood, that this coming Tri-State Dental Meeting of the States of Ohio, Michigan and Indiana, to be held at Indianapolis, Ind., June, 4, 5, 6, 1901, shall be known officially as the O, Mi! meeting. You are all invited to come and break bread with us. If there is any further information desired that is not imparted in the above it may be accumulated by communicating with,

GEO. E. HUNT,
Chairman, Indianapolis.

CHICAGO DENTAL SOCIETY.

The annual meeting of this organization was held in Schiller Hall, Tuesday evening, April 2, 1901, and L. Blake Baldwin, M.D., presented a paper on "Oral Manifestations of Syphilis," and exhibited several interesting cases of the disease in its various phases.

The essayist thought dentists, of all men, should be trained to recognize syphilitic manifestations in the mouth, for if they were unable to do so, not only would afflicted patients inoculate them, but they in turn would infect innocent persons. Leaving out the vital question of personal risk, the dentist with an infected finger or hand might through ignorance contaminate an unlimited number of patients, for a syphilitic lesion is a source of danger to others long before it causes the first victim any personal inconvenience. Out of several similar cases Dr. Baldwin related one of a dentist who came to him with a rapidly enlarging ulceration on the lower lip, stating that he was in the habit of holding instruments in his mouth to facilitate operations. He remembered one woman treated not long before who had white patches on the tongue, and a subsequent examination showed her to have syphilis in a violent form, although she was entirely ignorant of the fact. In a few weeks the dentist had secondary eruptions and specific treatment was begun, but all his suffering could have been avoided had he not been ignorant. The essayist then scored the dental colleges for not better instructing their students on this subject, and remarked that even dental textbooks ignored the question. This was not only unfair to the community, but might work a great personal hardship on the young practitioner. Besides the risk of personal infection, the dentist might be liable for a damage suit in case he

failed to recognize such disease in the mouth, for "The basis of a malpractice suit is the absence of due diligence on the part of defendant." Lesions of the nose, mouth and adjacent cavities are too often diagnosed as sore throat, tonsilitis, fever sores, irritation from smoking (forgetting the role tobacco plays in secondary syphilis), etc., and so not only is the first patient not helped, but the operator and his instruments are very probably infected so as to inoculate the next comer.

Dr. Baldwin then dwelt upon the pathology of the disease. The virus almost always enters the system through some abrasion of the skin. The initial lesion appears three weeks after inoculation, and the secondary manifestations commence in six, the latter usually consisting of eruptions on the skin, and being ushered in by slight fever, headache and nausea. Then the mucous patches appear, being in women especially the first symptoms, and the cervical and submaxillary glands are enlarged. With the third stage destruction begins, for the lesions are deep seated, and not only is the connective tissue attached, but necrosis of the bones takes place. It is very important that the dentist should be able to make a differential diagnosis between the various periods of the affection. While the mucous patch is an incident of secondary syphilis, it may easily be confounded, especially in the absence of genital chancres, with a true initial lesion of the lips, tongue, sides of the mouth and even tonsil. The mucous patch would infect ten cases where the chancre would one, because the latter disappears quickly and never returns, while the former may recur twenty or thirty times, and it must be sterilized so often as it appears.

Discussion was opened by Dr. E. R. Carpenter, who also thought instruction on this most important subject was extremely limited in the colleges, especially as regards clinical demonstration. He believed a dentist had no right to refuse to work for syphilitics, and if familiar with the disease there was little danger of infection. One of the precautions which he took was filling the crevices around the nails with an antiseptic soap. He also provided separate instruments and other adjuncts for this class of patients, keeping them entirely separate from his regular ones. Finally, he always treated these unfortunates at the end of the day, so as to avoid any possibility of accidentally using the same tools on regular patients, and to give ample time for thoroughly disinfecting himself and the instruments after operation.

Dr. C. E. Bentley asked the fundamental differentiation between a mucous patch and localized stomatitis, and Dr. Baldwin replied that it was hard to distinguish, but that ordinarily there was more induration of the former. Dr. Bentley then spoke about the difficulties encountered by the dentist in securing an accurate history in suspicious cases. He further thought that the profession used more caution in operating on such patients, and were more familiar with the most approved methods for sterilization of instruments than the essayist had indicated.

Dr. Carpenter asked why syphilis was usually not detected in women until mucous patches appeared in the mouth, and Dr. Baldwin replied that a woman would not notice lesions of the genitalia, as they were generally

painless, and she was not looking for them, as a man might be, so the disease advanced to the second stage and then aroused suspicion. He said the eruptions were best observed from a distance of six feet, and mucous patches and other lesions six inches away.

Dr. A. W. Harlan thought typhoid and many other diseases were much more dangerous than syphilis, and believed the danger in the latter was greatly minimized because of the great dread people had of the disease and the alacrity with which they would seek medical aid when they suspected infection. He thought ninety-five per cent of all cases were contracted by personal contact and did not believe the chance of extragenital syphilis was anywhere near so great as syphilographers would have us believe. He agreed that dentists should be able to recognize the disease and he asserted that sufficient instruction was given in most dental colleges.

At the close of discussion the election of officers for the ensuing year took place with the following result: Pres., A. B. Clark; 1st V.-P., G. B. Perry; 2d V.-P., B. D. Wikoff; Rec. Sec'y, E. MaWhinney; Cor. Sec'y, C. S. Bigelow; Treas., E. R. Carpenter; Board of Directors, J. E. Hinkins, E. Noyes, J. G. Reid; Board of Censors, W. V-B. Ames, C. N. Johnson, A. W. Harlan.

ILLINOIS STATE DENTAL SOCIETY.

The Illinois State Dental Society will meet in the beautiful city of Rockford, May 14–17, 1901. The program is probably the best ever presented. The social gathering arranged for Tuesday evening is a new departure, which should give the members an opportunity of becoming better acquainted. Everything points to a record-breaking attendance and a very profitable and successful meeting. The profession in neighboring states are cordially invited to be present and participate in the proceedings and discussions, and the dentists of Illinois are urged to let nothing interfere with their attendance during the four days.

PROGRAM—PAPERS: 1. The Annual Address of the Society by the President, J. G. Reid, Chicago. 2. Report of Committee on Dental Science and Literature, A. W. Harlan, Chicago. 3. Report of Committee on Art and Invention, Hart J. Goslee, Chicago. 4. "Why Fillings Fail," T. F. Henry, Streator. Discussion opened by R. W. Hood, Monmouth. Continued by J. W. Cormany, Josephine D. Pfeifer, I. B. Newsome and others. 5. "Cement Anchorage for Fillings," J. J. Reed, Rockford. Discussion opened by W. V-B. Ames, Chicago. Continued by J. E. Keefe, S. F. Duncan, J. E. Hinkins and others. 6. "Dental Jurisprudence," Edwin Hedrick, Esq., Peoria. Discussion opened by C. R.E. Koch, Chicago. Continued by J. N. Crouse, E. Noyes, I. B. Crissman and others. 7. "Anomalous Cases of Malformed Teeth, with Suggestions as to Possible Causes," Israel P. Wilson, Burlington, Ia. Discussion opened by G. V. Black, Chicago. Continued by F. B. Noyes, J. H. Prothero, Geo. T. Carpenter and others. 8. "Preventive Dentistry," Garrett Newkirk, Los Angeles, Cal. Discussion opened by C. N. Johnson, Chicago. Continued by D. M. Gallie, G. W. Whitfield, Geo. B. Perry and others. 9. "Air Chambers—Uses and Abuses," Alfred O. Hunt, Chicago. Discussion opened by T. W. Pritchett, Whitehall. Continued by J. H. Woolley, G. A. Thomas,

G. M. Brunson and others. 10. "Orthodontia"—Illustrated with Lantern Slides, J. N. McDowell, Chicago. Discussion opened by C. DeWitt Lukens, St. Louis. Continued by A. E. Matteson, C. C. Corbett, Grafton Munroe and others. 11. "Submarine Gold" (Illustrated by Stereopticon Lantern), George A. McMillen, Alton. Discussion opened by J. E. Nyman, Chicago. Continued by L. W. Skidmore, E. H. Allen, J. E. Keefe and others. 12. "Antiseptic, Germicide and Disinfectant," A. H. Peck, Chicago. Discussion opened by R. N. Laurance, Lincoln. Continued by E. K. Blair, J. E. Hinkins, C. B. Rohland and others 13. "Physiological Function of Saliva," J. B. Dicus, Chicago. Discussion opened by F. B. Noyes, Chicago. Continued by C. P. Pruyn, W. A. Johnston, D. E. Coulson and others. 14. "Microbiology and Office Clinic," G. D. Sitherwood, Bloomington. Discussion opened by G. W. Cook, Chicago. Continued by A. W. Harlan, E. R. Carpenter, J. M. Barcus and others. 15. "Philosophy of Mastication—Relative to Artificial Dentures," B. J. Cigrand, Chicago. Discussion opened by E. J. Perry, Chicago. Continued by J. H. Kennerly, F. N. Brown, T. W. Pritchett and others. 16. Report of Supervisor of Clinics, J. E. Hinkins, Chicago.

CLINICS: 1. Harlan, A. W., Chicago: Pyorrhea Alveolaris. 2. Cormany, J. W., Mt. Carroll: Gold filling, using Bonwill's mechanical mallet. 3. Hancock, J. E., Joliet: Porcelain crown. 4. Callahan, J. R., Cincinnati: Gold and tin in definite proportions for filling. 5. Roach, F. E., Chicago: Practical application of the wedge-lock facing. 6. Corbett, C. C., Edwardsville: Amalgam filling, cement anchorage, using Fellowship alloy. 7. Lukens, C. DeWitt, St. Louis: Orthodontia. 8. Taggart, W. H., Chicago: A. E. Peck's complete system for making porcelain inlay and restoration to absolutely fit the cavity. 9. McIntosh, F. H., Bloomington; A method of building up broken-down bicuspids and molars preparatory to receiving a gold crown. 10. Reeves, W. T., Chicago: Porcelain inlay or restoration. Exhibition of the Hammond electric furnace. 11. Brophy, Truman W., Chicago: Surgical clinic. 12. Wikoff, B. D., Chicago: A novel method of making a bridge. 13. Allen, E. H., Freeport: Gold filling. 14. McCandless, A. W., Chicago: (*a*) Setting crowns and bridges with gutta-percha, using electric annealer to soften the gutta-percha; (*b*) alteration of plaster model, adapting ideal dental base plate to insure snugly fitting denture. 15. Gilmer, Thos. L., Chicago: Surgical clinic. 16. Chappell, O. A., Elgin: Application and use of dead soft gold. 17. Ames, W. V-B., Chicago: Subject to be announced. 18. Pruyn, Chas. P., Chicago: Pressure anesthesia for removal of live pulp. 19. Pfeifer, Josephine D., Chicago: Filling root-canals. 20. James, A. F., Oak Park: Ladmore and Bronson matrix. 21. Carpenter, Elliott R., Pyorrhea at root bifurcations and its treatment with oxyphosphate of copper. 22. Cattell, D. M., Chicago: Filling a proximo-occlusal cavity in a bicuspid or molar; gingival one-third with non-cohesive cylinders or mats; occlusal two-thirds, including step anchorage, with cohesive gold. 23. Royce, E. A., Chicago: Demonstration of the varying shades of the natural teeth in the same mouth as applied to artificial dentures. 24. Good, Rob't., Chicago: Pyorrhea Alveolaris; Younger's method. 25. Johnson, C. N., Chicago: Preparation of cavities. 26. Duncan, S. F.,

Joliet: Gold filling, using the Berry electric engine and mechanical mallet No. 2. 27. Stewart, Lee K., Chicago: Long bites in continuous gum work. 28. Shryock, W. W., Fort Wayne, Ind.: Swedging seamless gold crown. 29. Crissman, I. B., Chicago: Labial cavity extending under the gum, filled with De Trey's gold, without rubber-dam. 30. McMillen, Geo. A., Alton: Use of submarine gold. 31. Hunt, A. O., Chicago: Uses and abuses of air chambers, also Dr. Griswold's removable bridge. 32. Johnson, A. G., Chicago: A novelty for the assistance of annealing and carrying gold. 33. Bridges, J. S., Chicago: Porcelain inlay, demonstrating the Ash swedge. 34. Rohland, C. B., Alton: Subject to be announced. 35. Prothero, J. H., Chicago: Arrangement and occlusion of teeth. 36. Brown, J. O., Chicago: Contour filling, using crystal gold. 37. Slonaker, J. W., Chicago: Nitrous oxid gas. 38. Dittmar, G. W., Chicago: Gold filling. 39. Green, W. F., Evanston: Subject to be announced. 40. Davis, L. L., Chicago: Celluloid cement filling. 41. Case, C. S., Chicago: Restoration of facial contours by a combination of orthopedia and prosthesis; especially applicable for cleft palate patients. 42. Powell, C. B., Jacksonville: Treatment of root-canals, demonstrating the use of a new broach holder of his own design. 43. Black, G. V., Chicago: Demonstrations of mallet force, using tuptodynamometer.

C. R. TAYLOR, Streator, Chairman Executive Committee.
J. E. HINKINS, Chicago, Supervisor of Clinics.

CHICAGO ODONTOGRAPHIC SOCIETY.

The regular monthly meeting was held at 613 Masonic Temple, Monday evening, March 18, 1901, with Dr. L. S. Tenney in the chair. After the reading of the minutes and other routine business had been disposed of, Dr. E. R. Carpenter read a paper entitled "Extract of Suprarenal Capsule and its Dental Uses."

Dr. Carpenter stated that the suprarenal capsule was discovered in 1564 by Eustachius, who also discovered the tubes leading from the nasal cavity to the middle ear, called Eustachian after him. In 1856 careful experiments proved that the removal of both suprarenal bodies caused animals to die in one or two days, thus showing that they are necessary to sustain life. In 1883 it was found that an aqueous extract of the capsule injected into guinea pigs diminished sensibility and ultimately paralyzed.

The drug is now used successfully in Addison's disease, congestion of the middle ear, hay fever, local operations on the eye, throat and nose and in hemophilia. It does not act on the nervous system, so there is no danger of a habit being formed. It may be taken in the form of tablets, but should never be injected hypodermically. When taken internally it acts as a powerful heart stimulant, but does not increase blood pressure and can be administered in large doses. The extract is valuable as an adjuvant to the use of cocain, for in some cases the latter does not produce anesthesia. Suprarenal when instilled lessens inflammation, often relieves the pain, and by its stimulating action on the heart tones the patient up so that cocain will work successfully. When used in combination it produces a deeper anesthesia than cocain alone, because it contracts capillaries and prevents the cocain from

being washed out of the tissues. The dried gland, one part, and water, ten parts, make a good aqueous solution. It should be well mixed and filtered, and then perhaps be sterilized by boiling, but the solution must be used very soon, as it will become putrid in two hours. Reports differ as to the power of any other substance to preserve the solution, but resorcin is the most widely advocated and seems to be efficient.

Dr. Carpenter used the suprarenal extract as a powerful astringent, employing it usually about the margins of the gums. It reduces hemorrhage in from one to two minutes; there are no bad after-effects, and rarely any secondary hemorrhage, while aseptic healing usually takes place. It also reduces swelling and produces temporary anemia. In fitting bands for crowns, adjusting cervical clamps, excising fungus growths, etc., and in pyorrhea pockets the extract is very advantageous. When the essayist is removing calculus and hemorrhage interferes, he packs a little of the dry powdered extract under the gingivae.

The discussion was general, and Dr. A. H. Peck criticized the course adopted by societies and essayists in not having some one prepared to discuss technical papers. Dr. J. E. Nyman did not agree with him, but thought the best results were obtained from impromptu discussion, for where the paper was seen some time before it was read the discussion simply coincided with the essayist's views.

Dr Geo. W. Cook had used the extract in pyorrhea pockets as a local anesthetic and hemostatic, and had found it to act favorably in acute rhinitis. Dr. A. W. Harlan considered the extract very useful in both internal and external hemorrhage, and thought it took the place of ferropyrin. .

Dr. J. E. Nyman then read a paper on "Emergency Crowns," in which he showed several extreme cases where crowns had to be made in an hour or less. After showing the weak points of several methods in vogue, and condemning any plan which necessitated the taking of impressions, construction of models, or making investments, he described a method demonstrated by Dr. Taggart some two years ago, as follows:

Trim the root off at the gum line, enlarge the canal, cut two shallow pits in the root on either side of the canal, buccally and lingually. Fit an iridioplatinum post in the canal, and allow it to project about a quarter of an inch above the root. This end is flattened and notched on the mesial and distal edges; the pins of facing are fitted into these notches, bent around the post; the facing laid face down on a piece of soft wood and the pins clinched tightly about the post with a small riveting hammer. When the facing has been fitted, "Fellowship" alloy is packed in on top of root and around the post and pins, and as it sets is trimmed and contoured to resemble the lingual side of the crown, so that there is no danger of crumbling. When the crown is removed there will be found two little projections on the lower side that fit into the shallow pits before mentioned and which act as a guide in inserting the crown.

Dr. Nyman's objection to this plan was the time required to fasten the pins and post together, and to adjust the facing and post to the adjacent teeth and root canal, also the setting of amalgam. He supposed that in most cases

the pulp had been devitalized before the accident occurred, but if not it was of course necessary to extirpate under cocain at once. He then described his method as follows: Grind the root down to the gum margin, enlarge canal, and adjust a post of suitable length. Flatten slightly the projecting end and roughen the other. Fill the canal with a gutta-percha cone, and after heating post force it to place and trim away the surplus gutta-percha. Slightly roughen with disk the interproximal contact points of adjacent teeth and grind the facing to fit the space, roughening the back of it and bending the pins to an angle of forty-five degrees. Dry all parts and after coating the back of facing, end of root, post etc., with quick-setting cement, hold the facing in position until the cement has set. Contour somewhat, but leave the cement between the teeth to give greater retention. Always keep a number of facings on hand in sets of sixes, and also have several posts of various size prepared for such emergencies.

In opening the discussion Dr. Taggart showed samples of various emergency crowns and deplored the lack of a blackboard in which to illustrate his work. He thought, and with justice, that a blackboard should always be available at dental meetings. He thought the most commonly employed crown was a simple open facing with some form of metallic post set in whatever material the worker might select. In one form he used square platinoid wire flattened on one side, with an offset. Two holes were made in it with a plate-punch, and pins of facing put through and bent over, then held in place with a drop of soft solder. In many cases he uses quick-setting "Fellowship" alloy in preference to gutta-percha.

Dr. J. G. Reid described an emergency crown used by Dr. A. E. Matteson some years ago. An ordinary rubber tooth was used and the post was made of 16 g. copper or other soft wire, looped in the form of a figure eight around the pins and drawn tight, the ends of wire being twisted to form a post. Soft solder was then flowed over the wire to cover pins and stiffen post, after which the crown was set as desired.

Dr. H. J. Goslee used regular facings with round or square wire as might be required. The pins were bent over wire and the whole fastened with soft solder or fusible metal. The crown was then built up with gutta-percha, which was also used for setting. He thought the best feature of a temporary crown was the fact that it kept the gum back from the root and facilitated the placing of a permanent crown.

Dr. J. N. Crouse said the paper took him back thirty years, when pivot teeth with wooden pins were used, everything being set with gutta-percha. He further stated that these same primitive affairs often lasted several years.

News Summary.

JOHN W. WILSON, 30 years old, a dentist at Cuyahoga Falls, Ohio, died April 2, 1901.

E. S. FAWCETT, 54 years old, a dentist at Alexandria, Va., died suddenly March 21, 1901.

E. J. DUNNING, 79 years old, a retired dentist at Cambridge, Mass., died March 17, 1901.

FLATTERING.—The DIGEST is the best dental journal on earth.—Dr. E. C. Chase, St. Louis.

HENRY MANCHESTER, 75 years old, a dentist at Pittsburg, committed suicide April 8, 1901.

J. D. SCOTT, 25 years old, a dentist at Georgetown, Ky., died of consumption March 11, 1901.

ROBERT YOUNGLOVE, 55 years old, a dentist at Hopkinsville, Ky., committed suicide March 15, 1901.

J. D. BENTLEY, 55 years old, a dentist at Willimantic, Conn., died March 21, 1901, from pneumonia.

WHAT'S IN A NAME?—Newark, N. J., has a doctor named Ill, and Prattsburg, N. Y., a dentist named Puller.

SIR EDWARD SAUNDERS, prominent in English dental circles, and dentist to Queen Victoria, died in March, 1901.

CHEAP ENOUGH.—"Dr. Hawley will extract teeth at twenty-five cents for the next thirty days."—*Buda (Ill.) Dealer.*

DIES IN CHAIR.—A woman at Fort Wayne, Ind., died in a dental parlor April 1, while under gas administered for extraction.

ARMY EXAMINING BOARD.—The board is finally made up as follows: J. S. Marshall, Pres.; R. T. Oliver, Recorder; R. W. Morgan.

TO PRESERVE COCAIN.—℞. Cocain hydrochl., 4 grains; acid salicylici, ½ grain; aqua destil., 3 drams.—*Jour. de Med. de Paris.*

JACKSON DENTAL ASSOCIATION at its April meeting elected the following officers: Pres., F. W. Smith; V. P., F. W. Howlett; Sec'y, Frank Pelham.

TOOTHPICK CAUSES DEATH.—An old man in Chicago stepped on a wooden toothpick in his bedroom, and the wound, though slight, resulted in his death.

HUGH F. SIDEY, a dentist of Atchison, Kas., was fatally injured March 22, in a fight with a man who accused the dentist of alienating his wife's affections.

SMOKERS' GINGIVITIS.—℞. Salol, 1 part; Tinc. catechu, 4 parts; Spr. menth. pip., 120 parts. M. ft. lotio. S. Teaspoonful in half a glass of tepid water as a mouth-wash.—*Indian Med. Jour., Calcutta.*

FACIAL NEURALGIA.—Put one dram of magnesia phosphate in a tumbler, and add twenty teaspoonfuls of hot water, give a teaspoonful every fifteen minutes until pain begins to abate, then every half hour.

BANKRUPT DENTISTS.—T. M. Dowsley, Boston, liabilities, $3,271; assets, none. W. A. Loud, Boston, liabilities, $2,166.81; assets, $437. D. W. Dickinson, Watertown, Mass., liabilities, $3,008.75; assets, $320.

PAINLESS CAUSTIC.—Cocain mixed with fuming nitric acid makes a painless caustic, and it is possible that when cocain is mixed with zinc chlorid, it may be painless. It is well worth trying anyhow.—*Alk. Clinic.*

TEETHING BACILLUS.—Old Doctor: The child appears to be teething.

New Graduate: Impossible! The bacteriological diagnosis discloses no trace whatever of the characteristic teething bacillus.—*Med. Stand.*

ODONTOLOGICAL SOCIETY OF WESTERN PENNSYLVANIA elected the following officers at its annual meeting in March: Pres., C. W. Bard; V. P., C. B. Bratt; Sec'y, A. G. Reinhardt; Asst. Sec'y, B. M. Rohan; Treas., J. A. Libbey.

RESTORATIVE.—A man dropped his wig on the street, and a boy who was following close behind the loser picked it up and handed it to him. "Thanks, my boy," said the owner of the wig. "You are the first genuine hair restorer I have ever seen."

LICENSES NECESSARY.—A man in Brooklyn, and the manager of a dental parlor in Newcastle, Pa., have been arrested for practicing dentistry without a license. A man in New York was this month sent to jail for thirty days for the same offense.

SALOON NOT A PUBLIC PLACE.—A judge in Indiana recently sustained a motion to quash an indictment against a dentist, which alleged that he was intoxicated while in a saloon, because a saloon is not a public place within the meaning of the law.

THEODORE F. CHUPEIN, 70 years old, a prominent dentist of Philadelphia, died March 23, 1901, from heart failure. For many years he had been editor of the *Dental Office and Laboratory.* He was also prominent in society work and lectured in one of the colleges.

AZYMOL is an antiseptic for the treatment of the mouth and skin. The preparation is matched by the following recipe: Menthol, 1; peppermint oil, 2; saccharin, 1; vanillin, 0·5; magenta trace; tincture of krameria, 4 to 5; alcohol (96 per cent), 92.—*Pharm. Centralb.*

BONE NECROSIS IN RUBBER FACTORIES.—Twenty young women employed in the manufacture of rubber goods exhibited a necrotic process in the jaws and teeth, similar to that observed in match factories. Lazarus calls this condition "rubber necrosis."—*Allg. Med. Cent. Ztg.*

MONKEY OR PENNY?—In celebrating Yom Kippur a man gave a penny to the Zoo monkey named John L. Sullivan, who proceeded to swallow the same. The park veterinary who is in charge is reported in an evening paper as saying that he has "strong hopes of its recovery."—*Med. Rec.*

HUSBAND RESPONSIBLE FOR WIFE'S DENTISTRY.—A dentist in St. Paul recently brought suit against a man for services for his wife. The defendant stated that he knew nothing of his wife having dentistry done, and hence was not responsible for the bill, but the judge allowed judgment for the full amount.

MEGAPHONE MARRIAGE.—A dentist in Missouri was engaged to be married, but shortly before the time set both he and the young lady contracted smallpox. They decided to get married at once and be quarantined together, so a clergyman performed the ceremony by shouting at the couple through a megaphone from a distance.

WHO IS LOSER?—"No, Mr. Ketchum," said the druggist, "I can not give my consent to your engagement with my daughter, but there is my wife's sister, now, whom I can guarantee is 'just as good' in every particular; besides, you get nearly twice as much for your money, for she weighs two hundred pounds."

CARBUNCLE OF THE LIPS.—Powers calls attention to the danger of inflammatory local disorders in the region of the lips, and the risk of thrombosis of the facial veins extending to the cerebral sinus and causing facial pyemia. The only remedy in such cases is prompt excision, through the mucous surface of the lip if possible.

IODOLENE.—This is a combination of iodol and albumen, which occurs as an odorless, tasteless, yellowish powder. It is practically insoluble in all solvents, but is slowly hydrolized by dilute alkalies, liberating iodin, of which it contains 39 per cent. It is employed as an antiseptic, and is neither toxic nor caustic.—*Brit. Jour. D. Sc.*

BRIGHT'S DISEASE —Bill Nye once said that John Bright, having discovered the need of "a good reliable disease for the use of the aristocratic and patrician statesman," began to "sit up nights and perfect Bright's disease." He says of it: "It has been kept out of reach of the poor, and to die of this disease has been regarded as a proud distinction."

HAS THE RIGHT RING.—A Colorado editor says, "Isn't it about time the city council takes some steps with reference to quack doctors and dentists? Merchants are protected, as nonresidents or peddlers can not come here and auction their cheap wares without a license, but quack doctors and dentists may come at will and bamboozle the community.

NORTHWESTERN UNIVERSITY BUYS TREMONT HOUSE.—The oldest hotel in Chicago, the Tremont House, at Lake and Dearborn streets, together with the ground upon which it stands, has been purchased by the Northwestern University for $500,000, and will be transformed into a home for the dental, law and pharmacal departments of the university.

EDITORIAL KINDNESS.—The *Galveston News* says, "A subscriber to a certain paper died and left fourteen years of subscriptions unpaid. The editor appeared at the grave and put in the coffin a linen duster, a thermometer, a palm-leaf fan and a recipe for making ice. Editors as a rule are not prosperous, but they are kind-hearted and generous."

DENTAL BOARD OF NEW SOUTH WALES.—The following gentlemen have been appointed by the New South Wales Government under the new Dentists Act to form the Dental Board: James Graham, president; Edward Johnston Jenkins, Alfred Burne, E. Reading, George Vern Barnett, Henry Peach, and two laymen, Wm. Joseph Trickett, George Norton Russell.

FOR VOMITING AFTER CHLOROFORM.—The following is from *Clinica moderna:*

℞	Cerium oxalate	2	grains
	Codein sulphate	½	grain
	Calomel	1	grain

TOO CHANGEABLE.—"Here, young man," said the old lady with fire in her eye, "I've brung back this thermometer you sold me."

"What's the matter with it?" asked the clerk.

"It ain't reliable. One time ye look at it it says one thing, and the next time it says another."

INDELIBLE PENCIL CONDEMNED.—A Chicago physician has protested against the use of the indelible pencil, which he charges has been the cause of innumerable sore lips and fingers. The doctor says the coloring matter in the indelible pencil is of the same nature as that which caused the death of Senator Cushman K. Davis, of Minnesota, in whose case the dye was in the stockings.

FORMALIN IN GLYCERIN—By A. C. Jordan. The author finds that the use of glycerin as a vehicle for formalin overcomes to a great extent its irritating effect on the tissues. He uses a solution varying from one to four per cent. Under these conditions he has found formalin useful in applications to the throat, as a mouth-wash, as an application to the skin, and for urethral injections.—*Med. Rec.*

QUICK SELECTION.—One of the travelers of the Dental Protective Supply Co. reports the following: A dentist in Missouri has a colored man to tend door, and whenever a set of teeth is needed for a special case this worthy goes after it. He looks over the traveler's stock about three times, and then selects a set without the aid of model or guide for size or shade. Thus far he has never exchanged a set.

WHAT MAN'S BODY CONTAINS.—A bowlful of sugar. Enough salt to provide a dinner party. Enough gas to fill a gasometer of 3,649 feet. Enough iron to make five carpet tacks. Enough carbon to make 9,360 lead pencils. Phosphorus enough to make 8,064 boxes of matches. Enough hydrogen to fill a balloon that would lift himself. There is enough fat to make from four to eight pounds of candles.—*N. Y. Jour. of Health.*

DRINKING WATER.—Huddleston reports experiments with the Schumburg method of purifying drinking water by bromin subsequently neutralized by ammonia, and finds that it is effective. He thinks that it is rapid, practicable and inexpensive, as a pound of bromin retails at from 65c to 75c, and as the amount contained in an ordinary pouch, weighing only 4 pounds, can be used to purify the drinking water for a day for a regiment of 1200 men.—*Jour. A. M. A.*

AMBIDEXTERITY.—An excellent way for the acquirement of this accomplishment is the learning of sinistral handwriting with pen and ink. When one can write comfortably with the left hand other accomplishments will become easy. Ambidexterity would prevent many occupation pareses. It would tend to a more equal use of the two sides of the brain, and might prevent or help some cases of hemicrania or perhaps some cases of hemiplegia. *Brit. Med. Jour.*

CANNY SCOT.—An old farmer in Scotland recently went to have a troublesome tooth extracted, and the dentist advised him "to have it out by the

painless method, which was only a shilling extra." He showed the farmer the apparatus for administering gas, and after a slight resistance the sufferer consented, and proceeded to open his purse. "Oh, never mind paying just now," said the dentist, kindly. "Hoots," answered the cautious old Scot, "I wasna thinkin' o' that, but if I'm gaen to sleep I thought I wad like to count my siller fust."—*Tit-Bits.*

DAMAGE SUITS GALORE.—A woman in St. Paul has brought suit against a dentist for $5,000 damages, claiming that he broke her jaw while attempting to extract a tooth. A man in Rhode Island has sued to recover $500 for damages, because a dentist started to pull one tooth but brought out two at the same time. A verdict for $200 has been given against a dentist at Pittsburg, the plaintiff alleging that while extracting a tooth the dentist severed a facial artery. A verdict for $2,000 has been awarded to a woman in Fresno, Cal., who brought suit against a dentist for alleged unskillful and injurious work.

BACILLI IN MOUTH AND THROAT AFTER DIPHTHERIA. MAETHER.—The conclusions of the writer's tests are that peroxid of hydrogen and ammonium carbonate are effective gargles for eradicating lurking bacilli after diphtheria. Ammonium carbonate has the advantage of dissolving the mucous secretions and thus allowing the disinfectant access to the bacteria. Maether recommends a combination of the two, gargling first with a 1 per cent solution of ammonium carbonate and then with a 10 per cent solution of commercial peroxid of hydrogen. If bacilli still lurk in the deep crevices of the tonsils they must be mechanically dislodged with a fine sound.—*Presse Med. Jour. A. M. A.*

NITRATE OF SILVER POISONING.—At a recent meeting of the Berlin Psychiatric Society (*Deut. Med. Zeit.*) Dr. Max Edel remarked upon the rarity of poisoning from the use of the stick of lunar caustic, an occurrence which was chiefly the result of the stick's breaking while it was being used in the mouth, and the detached fragments being swallowed. He reported the case of an insane man who had swallowed three sticks with suicidal intent. In three days after his admission into an asylum he was attacked with fibrinous pneumonia, and died in a few days more, after persistent high fever and delirium. At the outset breath was fetid and there was diarrhea with whitish flocculi resembling curdled milk.—*N. Y. Med. Jour.*

DOCTOR'S GUESS—Lawyer Chapman of Los Angeles was once associated with Senator Stephen M. White in a certain case. Chapman loves a good dinner, and one day, just before the big case was to come up in court, he ate more than he ought. The next day he was sick, and White took a doctor around to see him. Chapman was groaning with pain, and the doctor was puzzled. At last the doctor noticed a red spot on Chapman's cheekbone, and came to the conclusion that Chapman needed a dentist, and told him so: "You have an ulcerated tooth. That's what ails you." Chapman quit groaning long enough to turn to his wife and say: "Just hand me my plates off the bureau so I can see which one of those miserable teeth is aching."—*Med. Standard.*

WASHINGTON LAW UNSATISFACTORY.—The dentists of the State of Washington have been "gold-bricked," so to speak. The old dental law was satisfactory in its workings, but recently the board found that convictions for violations could not legally be obtained under it. An attorney was therefore hired to draft the new bill, and it was passed by the legislature without opposition. The dentists had, however, neglected to examine the measure carefully, and now find it provides that certificates shall be issued to every resident in the state who was engaged in the practice of dentistry when the bill passed. This means that any person who has tinkered around an office for a few weeks or months can apply for a certificate. The board will, however, test the validity of the bill.

MIGRATORY FOREIGN BODY WITH X-RAY ILLUSTRATIONS.—By D. B. Kyle. The patient was a woman who complained of frightful neuralgic pain with soreness and swelling. The peculiar feature in the case was the change of site of the symptoms. At times one would almost suspect mastoiditis. Sometimes facial neuralgia, again ethmoiditis, and lastly all the symptoms of confined suppuration of the maxillary sinus were present. During one of these attacks a piece of a needle was discharged from the nostrils in a mass of pus, but symptoms continued at intervals. A radiograph led to a suspicion of a foreign body in the antrum, but nothing was found on exploration through the cuspid fossa. A few days later a gumboil-like swelling formed near the operative opening, and finally discharged spontaneously; but something hard was located and found to be the rest of the needle, which was extracted. Symptoms permanently disappeared.—*Med. Rec.*

CATAPHORESIS.—Williams reports a case of caries within the internal ear treated by him by filling the meatus, packing the tympanum and filling the canal with dilute hydrochloric acid and placing the pole well wrapped with cotton into the auditory canal, the other pole being applied to the mastoid on the opposite side. A street current of 110 volts was used, regulated by a selector apparatus obtained from a dental supply-house. No milliamperemeter was used, but the force was graduated by the sensations of the patient, and he claims that the patient was soon able to bear for a period of thirty minutes a voltage of 36 to 40 directly through the cranium in this way. The hydrochloric acid produced slight dermatitis, which he thinks was not harmful. The patient recovered. He also claims to have treated similarly another case of antrum disease. The treatment appears rather severe and risky, and perhaps had not better be adopted too freely.—*Jour. A. M. A.*

SHALL THE ANTRUM BE OPENED IN ALL ACUTE EMPYEMAS OF THE MASTOID CELLS?—Snydacker (*Archives of Otology*) believes the antrum should be opened in all cases of acute empyema of the mastoid cells. The first opening into the antrum should merely be exploratory. If no pus wells up, and by inspection no pathological changes are found, the relations of the part should be disturbed as little as possible. The author deplores the action of some operators, where there was absolutely no indication for it, of curetting the antrum and enlarging the cavity, so that the pus is constantly reinfect-

ing the wound. The conservative operator, bearing in mind that the antrum is always more or less involved in purulent middle-ear disease, must convince himself what the condition of the antrum is, and if he finds empyema or granulations, or polypoid growths, then the cavity should be enlarged, making broad communication with the tympanum. If, on the other hand, he has convinced himself that the antrum is not the seat of danger, he should at once desist from further disturbing the parts.

FUNCTIONAL AND ABORTIVE MYXEDEMA.—Recent observers have called attention to the fact that abortive forms of myxedema are not infrequent. The patients are apt to be undersized, and do not attain till late their growth and development, their teeth and the use of their limbs. They have the appearance of being older than they are. There is no mucoid infiltration of the subcutaneous tissue, but the mucous membranes are liable to functional swelling, or even hypertrophy. The tonsils may be enlarged and there may be lymphoid growths in the pharynx. The teeth decay early and the hair falls out prematurely. The falling of the hair of the outer part of the eyebrow is said to be pathognomonic. In women there are disturbances of the circulation of mucous membranes at the menstrual period. Painful conditions of the joints are often noticed. Child bearing and prolonged lactation are badly borne. The recognition of the cause of these easily misjudged symptoms is very important. If they are really due to defect of the thyroid the administration of the extract will bring relief.—*Med. News.*

GLASS-BLOWERS' MOUTH.—Scheele reports two cases which he found among glass-blowers, and also among musicians who blow certain forms o wind instruments. These two patients came from a factory which employs forty hands, so that the frequency may be estimated at about two and one-half per cent of all glass-blowers. The condition is described as a hernial-like out pocketing of the muscles of the cheeks, also frequently combined with emphysema of Steno's duct; the epithelioma of the mucous membrane is peculiarly influenced, giving rise to the so-called *plaques opalines.* In the lax condition the pocket of the buccal mucous membrane has the form of an egg; when distended it becomes ballooned out and one can feel with the finger trabeculæ on the inside of cheek. The manner in which the condition is produced is easily understood when we consider that the normal pressure of expiration amounts to six or nine millimetres of mercury, while with glass-blowers the pressure ranges from ninety to one hundred and ten millimetres of mercury. Together with this out-pocketing there is likely to be a disturbance of hearing and cramp-like contraction of the muscles of the cheek —*Phila. Med. Jour.*

CLEANSING THE TEETH.—M. H. Fletcher, D.D.S. (*Cincinnati Lancet-Clinic*), as the result of elaborate investigations, gives the following formula:

℞ Pulverized cereal..... 75 per cent.
Sodium borate..... 18 per cent.
Potassium chlorate ..... 7 per cent.

Orris and menthol to flavor, and saccharin to sweeten to taste.

Dr. Fletcher says that it requires at least five grains at a time of any pow-

der to be at all efficient in cleansing the mouth and teeth, and double or triple the portion is better. In every five grains of the above formula there is one and one-quarter grains of the combined remedies; this is sufficient to keep the saliva decidedly alkalin for some time after using and to counteract the ill effects of sweets. Its preservative and antiseptic properties are shown from the fact that ten grains of the powder taken into the mouth and held until dissolved, then ejected into a test-tube with a dram of saliva, remained pure and unchanged for forty days, the tube remaining unstoppered. It seems apparent that with this prescription teeth can be cleaned without injury, and that decay may be retarded; a tablet of it allowed to dissolve slowly in the mouth at frequent intervals would tend to arrest decay.

ANGINA.—Mme. B., aged thirty-five, was diagnosticated to have the angina of the bacillus of Friedlander. On the 9th of July she showed aphthous stomatitis, gingivitis, and small ulcerations on the tongue and inner portion of the cheek. The tonsils were large and covered with the pearly white membrane adherent to the tissues underneath. They were larger on the right than on the left and three or four mm. in diameter. Their edges were clear and rounded. Situated below the crypts, they resisted pressure and were not expressed, as in the follicular amygdalitis. On the side of their adherence they were very friable, and it became necessary to employ the curet for detaching them. The surface of implantation was bloody. On the right tonsil there existed a sort of mucous veil, very adherent, covering its larger part. The pillars also were strewn with points, and there was one plaque on the pharynx. The patient had had many attacks of acute amygdalitis in infancy, pneumonia at the age of seven, bronchitis at twenty-nine, and acute anginas two years ago and last year. At the beginning of her stomatitis she had slight fever, swallowing was difficult, and the glands were slightly enlarged. These symptoms disappeared rapidly. On July 20th the conditions remained quite the same, with no pain in deglutition. Cauterization with silver nitrate and lavage with carbolized solutions.—*Emil Meyer, in N. Y. Med. Jour.*

TREATMENT OF TUBERCULOSIS AMONG THE ANCIENTS.—Meunier reviews in an interesting way the ancient treatment of tuberculosis. Hippocrates believed in regular exercise and complete rest. Everything depended upon the personal equation. If exercise agreed with the patient, then that was what he should take. Hippocrates believed in the use of red wine, but substituted white in fever. The patient was advised to avoid hot viands and drinks. Celsus advised for the more robust invalids long sea voyages. For those more feeble he approved of shorter trips. Pliny attached great importance to the curative power of the sun. Galen made a point of high altitudes. He believed mountain air dried up the tuberculous ulcerations. The Arabs evidently realized both the contagiousness of tuberculosis and its relatively frequent cure. The school of Salerno believed in the advantages of salt and of honey, and of the milk of goats and asses. Rondelet, contemporary of Rabelais, seems to have been the first to mention the juice of meat. John Jonston regarded tuber-

culosis as curable even in its advanced stages. Van Swieten foresaw the role of respiratory gymnastics. Roziere advocated pure air, moderately dry, and especially an air whose qualities were different from that of the place where the patient contracted his disease. Raulin attached great value to the vapors of sugar. The history of this treatment reveals many curious ideas, and many points which are even at present worthy of careful consideration —*Le B. M.*

WHY CHINESE EAT RATS —The Lahore (India) *Tribune* quotes a Chinaman's explanation of the use of rats for food purposes as follows: "What a carrot is to a horse's coat, a rat is to the human hair. Neither fact can be explained, but every horseman knows that a regimen of carrots will make his stud smooth and lustrous as velvet, and the Chinese, especially the women, know that rats used as food stop the falling out of hair and make locks soft, silky and beautiful. I have seen it tried many times."

BACTERIA IN LIBRARY BOOKS.—Dr. F. A. Kuflewski, chairman of the special committee appointed by the public library board of Chicago to consider the advisability of sterilizing the books in the library for the purpose of preventing the spread of disease, recommends that some system be adopted for freeing the pages of the volumes from bacteria. He said that all of the fifty books examined by him during the investigation were found to be more or less infected. He said there was no doubt that disease was spread by the books, and advised that a system of sterilizing the volumes by the dry process be adopted immediately.

MANDAMUSING BOARD OF EXAMINERS.—Dean vs. Campbell and others was an action for mandamus that was brought to compel the board of pharmaceutical examiners of the twenty-sixth judicial district of the state of Texas to issue to the plaintiff a certificate to follow the business and occupation of a pharmacist. The district court sustained demurrers to the petition. But its judgment is reversed by the Court of Civil Appeals of Texas. The latter is of the opinion that if the averments of the petition were true, the plaintiff was entitled to the writ of mandamus. It says that the court is lacking in power to control the discretion of the board of examiners, but the averments of the petition in this case reached beyond the point of discretion. They were to the effect that the plaintiff passed the requisite examination according to the standard prescribed by the board, and that he was adjudged by the board as entitled to his certificate, but that the board wilfully and maliciously refused to issue it to him. If as a fact in his examination he stood the test required by the board, and it was the latter determined that he was entitled to his certificate, the issuance of the certificate, the court holds, then became a ministerial act, and the wilful failure and refusal to issue it would be a wrong perpetrated upon the plaintiff, for which his remedy would lie as prayed for. To this the court adds that it has examined the statutes and the decisions on the question of jurisdiction of the trial court in actions of this character, and the conclusion reached is, that if the proper case is made by the petition, the district court has jurisdiction to issue its mandamus to require the board of examiners to perform a ministerial duty.—*Jour. A. M. A.*

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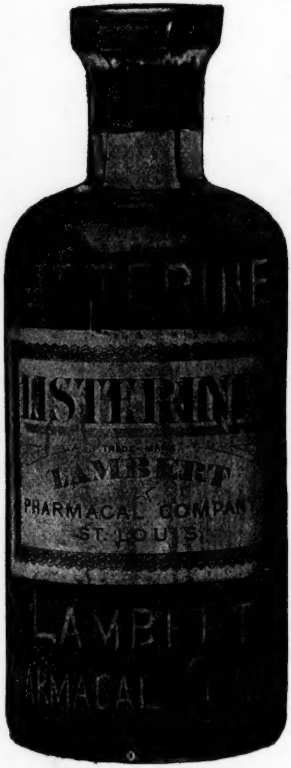

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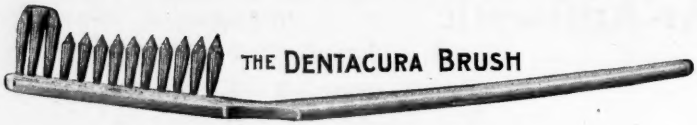

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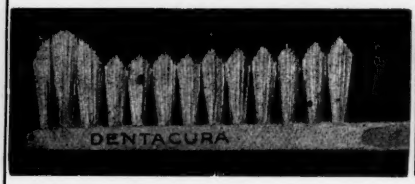

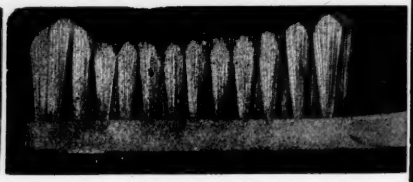

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